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CLINICAL
LECTURES AND ESSAYS.

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CLINICAL LECTURES AND ESSAYS

BY

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ST. BARTHOLOMEW'S HOSPITAL: SURGEON TO THE HOSPITAL FOR SICK CHILDREN.

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CLINICAL
LECTURES AND ESSAYS.

PREFACE

TO

THE FIRST EDITION.

THE GREATER PART of the contents of this book have been already published in Medical Journals, or in Hospital-Reports. I hope that I am not wrong in publishing them again in this form.

I do not suppose that the book contains much, if anything, which is not known to those who are in large surgical practice, or familiar with surgical literature; but it is not intended for these. Its chief purpose will be attained if it be useful to students and to those who have too few opportunities of studying surgery in either large practice or large books.

Of the many faults in the book of which I am conscious, faults of both matter and style, none seems to me greater than the apparent disregard of the works of others. I beg pardon of all whom I may thus offend. I would not have been guilty of this fault if I had had time for reading as well as practice.

Mr. Howard Marsh, besides relieving me of the usual troubles of an editor, has done what he can in an appendix of notes to amend the chief of my defects.

1 Harewood Place, Hanover Square:
March 1875.

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CLINICAL LECTURES AND ESSAYS.

THE VARIOUS RISKS OF OPERATIONS.

LECTURE I.

STUDENTS are always warned against a devotion to the operating theatre. There is some wisdom in the warning; but it is very generally neglected. The reasons for liking to see operations are so many and strong and, for the most part, so bad, that it is useless to argue against them. I will therefore try to turn to good use your taste for operations, by trying to provoke you to study a subject connected with them which is not less important than the art of operating—the subject, namely, of the influence of various conditions of patients on the consequences of operations performed on them. You hear me talk in the wards of bad and of good subjects for operation, and of greater and less risks of life; and in one case I express fears of the effects of shock; in another, of erysipelas; in another, of slow and imperfect healing: and you may fairly ask to be taught what, in all these matters, I profess to know or believe. In this and some following lectures I will try to teach you; not because I can tell you more than is known by most of those who are largely engaged in surgery, but because I cannot refer you to any book in which you may learn nearly so much upon the matter as you ought to know.[1]

The average risk of life from the effects of any surgical operation may be estimated from tables such as are published in our hospital-reports. And, if an operation be frequently performed, the variations of its risk in each sex and at different times of life may be similarly estimated as averages. But it is not within the capacity of tables to supply the means of reckoning the variations of risk dependent on the great variety of personal conditions that we have to do with among the sick. Tables cannot yet tell the several or united influences of differences of constitution, of sound or unsound health, of diseases of internal organs, of race and temper and habits of life. Yet the question of the safety of an operation may turn on these very things. And not only of its safety, but of its utility; for there are some cases in which operations are improper, not because of the risk of life, but because the patients have such peculiarities of constitution that they would suffer more pain or loss of time or of health from an operation than even the cure of their disease would justify. In short, you will find that, if you are to do more good than harm by operative surgery, you must acquire skill in detecting and, if possible, amending the defects of health which make operations unsafe or unsatisfactory.

Now, first, we ought to have a good standard of health to which we might refer as the fittest for bearing operations. Such a standard is not to be found among those who, on some reckonings, might be taken for models of health—those, namely, who have excellent health for either pleasure or an active working life. These are not the best for recovery from operations. Amputations for injuries of limbs, which are, of course, performed for the most part on persons injured while in good health, are much more fatal than similar amputations for diseases. And the apparent disadvantages of full health which this fact illustrates are to be seen not only in the greater mortality of similar operations, but in the manners and rates of healing of those who recover. You may see two amputations done on the same day: one, say, on a strong man whose limb has just been crushed; the other on a man utterly enfeebled by old disease of a joint. And then, you may not rarely see, that the healing of the strong man requires a much longer time, and is interrupted by many more untoward events, than that of the weak one.

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[1] See Note I.

Do not let me, however, seem to imply by these facts that health is, in itself, a worse condition than disease is for recovery from injuries. It is far more probable that the comparative ill doing of the healthy is due to their circumstances. They have to bear the shock of their injury as well as of the operation; their mental distress is much greater than that of those who are relieved from disease; they are subjected to a great and sudden change of habits, and have to give up many of the customs by which they sustained the health that was fit for pleasure or for work. Especially they have to give up the active mental and bodily pursuits in which they excreted largely the large refuse-matter of their foods and tissue-waste; and, in many cases, the necessity of lying still in some unusual posture produces restlessness sufficient in itself to disturb recovery from injury.

But, however this may be, they from whom we might take standards of health for some purposes do not supply such standards for studying the consequences of operations. Where then shall we find the lowest rates of mortality and other mischiefs? Perhaps you may find them in a class whom you may often study here. We have a large number of printing-offices in the neighbourhood of the hospital; and every office employs many boys from twelve to sixteen years old; and hardly a week passes but we have one or more of these boys brought-in crushed by the printing-machines. Fingers, hands, and arms are thus mutilated; and I know no class of patients that recover more remarkably. Not only do they not die, but their wounds heal steadily and quickly; they escape erysipelas and spreading suppurations and secondary hæmorrhages; and often, when, to save any piece of a hand, we leave bits of skin that seem as if they could not live, they yet do live and grow good scars.

I know no class of persons who are better subjects for operations than these boys. As Mr. Callender[1] has pointed out, our success with them helps to bring us the credit of a very low rate of mortality in amputations of the upper extremity. You may, however, find individuals, whom I cannot classify, who do bear operations even better. For operations in boys are commonly followed by very sharp traumatic fever which wastes and weakens them, though it rarely does more harm. But occasionally one meets with patients in whom even a severe operation is followed by neither fever nor any other trouble whatever. I can give you no exact general description of such patients, but I believe you will find them among those who, except for some local disease requiring the operation, are of sound health, and whose disease, without disturbing their natural tranquillity of mind and constitution, has induced them to live as invalids, carefully and very temperately, never exhausting themselves. They are naturally cheerful healthy persons, to whom an operation brings no great change of habits, but promises release from great unhappiness.

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[1] *St. Bartholomew's Hospital Reports*, vol. v. p. 248.

Taking these as the best subjects for operations, and believing that the best possible recovery is one in which the wound heals without inflammation and without fever, we may speak of others as good, or not bad, or bad, or very bad—terms too ill-defined indeed, but as accurate as any knowledge of mine will justify me in using.

Among the various differences of patients, difference of age is probably that with which we may connect the most regular average difference in capacity to bear operations. I believe that, after two or three years old, the increase of age is attended with a proportionate increase of liability to death and other ill consequences of operations. Our hospital-reports and all similar tables will show you this; but within the general rule there are many things that you should learn.

Young and healthy children are chiefly in danger through the shock of operations, and they bear pain very ill—it adds much to the danger of the shock. But if the shock and pain be well passed, they are in less risk than older patients. Especially, they are singularly little liable to pyæmia after wounds—a strange contrast to their liability to it in association with acute necrosis.[1]

But the chief interest in connection with age is in the cases of old persons, for among them are patients in whom nearly every risk of operations rises to its maximum. Nor will this seem strange if you consider how many disadvantages for the bearing of injuries old age brings with it. The longer a man lives after middle age, the more likely is he to have some organic disease, the more certain is he to have many degeneracies. Hence, to name one source of trouble, the tardy circulation, and the various congestions due to mere sinking of the blood, not in the lungs alone, but in the liver and intestines and all other dependent parts—facts to be much considered in regulating the postures of old people after operations. But the extreme of unfitness for injuries you may see in some of the poor old creatures on whom we are forced, by glimmers of hope, to operate for hernia. They are so near death that, temper it as we may, the least shock kills them.

But among the old there are even greater differences than among the younger in the ability to recover from operations; and age, if reckoned by years, is not the only thing in them that we must estimate. Years, indeed, taken alone are a very fallacious mode of reckoning age: it is not the time, but the quantity, of a man's past life that we have to reckon; and for this estimate, with a practised eye, looks are less deceptive than a tale of years. Even among those old patients to whom you cannot impute disease you may easily, by their appearances, mark out some groups very different in their bearing of injuries. They that are fat and bloated, pale, with soft textures, flabby, torpid, wheezy, incapable of exercise, looking older than their years, are very bad. They that are fat, florid, and plethoric, firm-skinned, and with good muscular power, clear-headed, and willing to work like younger men, are not indeed good subjects for operations, yet they are scarcely bad. The old people that are thin and dry and tough, clear-voiced and bright-eyed, with good stomachs and strong wills, muscular and active, are not bad; they bear all but the largest operations very well. But very bad are they who, looking somewhat like these, are feeble and soft-skinned, with little pulses, bad appetites, and weak digestive power; so that they cannot, in an emergency, be well nourished.

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[1] See Note II.

I have said that all the risks of doing badly are at their maximum in some among the old; but these are some of the risks for which they will always need your especial care. The old are, much more than others, liable to die of shock, or of mere exhaustion within a few days after the operation. They bear badly large losses of blood, long exposure to cold, sudden lowering of temperature, loss of food. Large wounds heal in them lazily; and hence a prolonged liability to secondary hæmorrhage and other mischiefs of open wounds. Their stomachs, too, are apt to knock-up with what may seem to be no more than necessary food, though indeed it often is so; for many old people are in less peril with a scanty diet than with a full one. Their convalescence is often prolonged ; and you may expect to meet sometimes with great disappointment in having your old patients die with some slight casual disease, as if exhausted by the long expense of vital power in healing large wounds or with some more acute affection which has been half-concealed and overlooked. They get all but well ; and then, after seeming for some time stationary, they fade and waste and die. They fulfil what I have often told you of the diseases of the aged : that there are some to whom convalescence is more dangerous than disease.

These special dangers of the old will suggest to you some special cares for them. You must choose for them, if you can, short and gentle operations ; and be sparing of hæmorrhage ; and make wounds that may not lead to long suppurations. You must keep them warm, and not feed them beyond their real necessities, nor keep them long recumbent. In all their convalescence you must be constantly on the watch for latent mischief. Your cares must be doubled when your operations are on the lower limbs or the lower part of the trunk, or on the back, for in operations on these parts the risks, both local and general, are much greater than in the parts above the heart.

In saying these things about the old, I have had in view only those patients who may call themselves 'well for their age,' and in whom you may find no signs of disease. Infirmities they have—degenerations and decays accumulated and perhaps premature, yet not diseases. Now let me add, that of all the conditions of disease or imperfect health of which I have next to speak as influencing the results of operations, there is no graver complication than old age, unless, indeed, it be habitual intemperance.

And first as to the influence of various constitutions and chronic constitutional diseases, supposing them to be unattended with any considerable organic disease, except that which requires the operation.

Scrofulous patients, whether old or young, have, I think, no special liability to the fatal consequences of operations, except in so far as they are feeble and may die (though they rarely do) through slow exhaustion or the gradual development of some internal organic disease. The relief from pain and the removal of irritation commonly seem more than enough to compensate for the shock and other depressing influences they are at first submitted to. They seem not very liable to pyæmia, erysipelas, or other of these sore plagues. All this you may see often enough in our cases of excision of joints; and in these same you may also see, better than in any others, what are the defects of the scrofulous constitution in reference to recovery from operations. The wounds heal very slowly; the cellular tissue is apt to become œdematous and 'gummy;' the scars are thin, and often break-down and ulcerate; the deeper cuttings become sinuous, with tedious discharges of thin pus, and wasting. In a word, the half-healed wounds are apt to become like scrofulous ulcers; and if the patients remain long uncured, their constitutional scrofula is increased by long confinement, and perhaps by hospital-air.

Thus, you may sometimes find (but it ought to be in a small minority of cases) that scrofulous patients seem to be, if I may so speak, made more scrofulous by the removal of a diseased limb or joint. And this is, no doubt, the explanation of some of the cases which have led to a belief often entertained, that the removal of scrofulous disease from one part induces its occurrence, or aggravates it, in another. There are, indeed, some cases, especially among the middle-aged and older, in which the two events do seem to stand in direct relation. You may have seen last year a girl in Sitwell, whose forefinger was removed for scrofulous disease of one of its joints. The wound had scarcely healed before similar disease ensued in a knee-joint which was sound before the removal of the finger. So, I have seen a patient one of whose toes was removed for scrofulous disease; then a knee became similarly diseased, and the limb was amputated above it; and soon after this, caries of part of the spine ensued. Recovery from this last disease has been followed by no further outward appearance of scrofula. Such sequences, however, are not to be certainly ascribed to the operations. Recently, a patient long under treatment with scrofulous disease of the elbow, and with the sinuses healing, has had scrofulous disease of the spine, and this has seemed to advance while the disease of the elbow has improved.

The study of the relation of these successions of similar disease in different parts is one in which you may do good and gain honour; but the event is so far infrequent that, except in the intensely or the acutely scrofulous, or those who are not young, you need not fear it. In the large majority of cases, especially the chronic cases, and in those who have not reached middle age, the removal of a scrofulous part is followed by improved health. Still, remember, the operation is finally effective only against that part; the patient may remain scrofulous and may need the same constitutional treatment after, as before, the operation. Therefore, before you operate, make sure, if you can, that the patient, especially if he is old, is one who can stand prolonged confinement. Have this in mind when you have a choice between two or more operations; and, after the operation, take care that the patient's general condition is helped with fresh air and fit food and cleanliness and all other good means that you can provide.

The scrofulous patients of whom I have been speaking are such as may be considered very liable to tuberculous disease, though having none actually present—at least in any internal organ. Of the actually tuberculous I will speak hereafter, especially in relation to the risks of those who are phthisical. But now to speak of others.

You will sometimes have to operate on syphilitic patients; and you will find them not bad subjects, except in so far as their syphilis may have made them very feeble or cachectic or, in rarer cases, may have affected their internal organs.

Incisions through, or within the range of contact of, inoculating sores will be inoculated and become chancrous; but I have seen no worse mischief than this in those with primary syphilis. I am not sure that I ever operated on anyone with active secondary syphilis; but I have done so in many who have had sores of tertiary syphilis and have afterwards had renewed tertiary symptoms. But they recovered as well as any other patients of equal general strength, and none of the wounds became like syphilitic ulcers.

In this respect, indeed, the contrast between scrofula and syphilis, as affecting the consequences of operations, may seem very striking, especially when one thinks of the many operations for aneurism which are performed on those who are or have been syphilitic; but I suspect that, in a larger number of cases than I have had, some wounds would become seats of syphilitic disease,[1] for it is not rare to find cases in which nodes and necrosis and tertiary ulcers have had their origin in blows and other rough injuries done to syphilitic people.

I have never had occasion to operate on a patient with acute rheumatism; but I advise you to be careful in operations on young persons who have had it, even though it may have been many years before. They may have diseased valves of their hearts, and many of them are of naturally very feeble constitution. In those with chronic rheumatism, or subject to it, I have seen no mischiefs that could be ascribed to their constitutional defects.

Of the gouty, in reference to their capacity to bear operations, I think that much worse has been said than they deserve. I have, in at least three instances, seen patients attacked with acute gout shortly after capital operations; and the progress of good recovery was in none of them impeded. One of these cases was that of a fat, plethoric, active man, from whom I cut-out a cancerous breast. On the next day gout set in with a furious severity—worse than he had ever had it; yet his wound healed, and he recovered from all the effects of his operation as well as any healthy person could have done.

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[1] Such a case is reported by Mr. Simon in the *Twelfth Report of the Medical Officer of the Privy Council*, 1869, p. 39. See also Note III.

I have seen no greater troubles in patients whom I have known to be subject to gout or born to it; and I therefore believe that the disrepute of gout for making men unfit for operations is due to the fact that, as gouty people grow old, they become, sooner and more certainly than others, subject to degeneration of the kidneys, heart and other internal organs. These, and not merely gouty disposition or constitution of the blood, impair their power of bearing injuries and operations. Look sharp for these organic defects and avoid them, and then, I believe, you will find your gouty patients as fit for operations as others of the same ages and habits of life, provided, of course, that you correct, as far as you can, any actual disturbances of function. Operations may bring out their gout (as the saying is), but will not endanger their lives.

Cancerous patients are certainly not bad subjects for operations, or, at least, not worse than others of similar age and general condition. Many, indeed, being operated on in the early stages of the disease, are, for their age, in a full average of general good health; and even in those on whom operations are advisable, though they are cachectic, it is often remarkable how well their wounds heal, and what a revival of power they display.

These, so far as I have been able to learn them, are the various risks of patients with admitted morbid constitutions. The importance of being able to decide the questions arising in such cases must be evident to you. And questions of equal importance, and of yet greater difficulty, arise in the cases of many who may not be called diseased, but who certainly are not, in any just sense of the word, healthy. Such are the plethoric, the over-fat, the intemperate, the over-fed, the feeble, the degenerate, the cold-blooded. What can be safely said about these, and of the dangers they severally incur when we wound them? I will try to tell what I believe.

Plethora, pure and simple, is not a bad condition for operations. So far as I have seen, people that have been full-blooded, ruddy, warm, round-limbed, tight-skinned, with strong hearts and, as we suppose, a rather excess of blood, have done well. But such people must be carefully managed; not fed too well; not kept too long in bed; not allowed to retain their refuse: and mere bigness must not be taken for plethora.

For the over-fat are certainly a bad class, especially when their fatness is not hereditary, but may be referred in any degree to their over-eating, soaking, indolence, and defective excretions. The worst of this class are such as have soft, loose, flabby, and yellow fat, and I think you may know them by their bellies being pendulous and more prominent than even their thick subcutaneous fat accounts for; for this shape tells of thick omental fat and, I suppose, of defective portal circulation. I know no operations in which I more nearly despair of doing good, than in those for umbilical hernia or for compound fractures in people that are over-fat after this fashion. Nothing short of the clearest evidence of necessity or of great probable good should lead you to advise cutting operations in people of this kind. Do lithotrity for them rather than lithotomy; think, even, very carefully whether it is absolutely advisable that you should do either; incline against amputations for even bad compound fractures; and, wherever you can—as, for instance, for cutaneous cysts, hæmorrhoids, and the smaller examples of scirrhous mammary cancers,—use caustics rather than the knife or ligature.

All these warnings must be doubled for the intemperate. One does, indeed, sometimes meet with habitual drunkards who pass safely through the perils of great operations; but these are rare exceptions to the rule, according to which one may reckon that the risks of all operations increase with the increasing degrees of habitual intemperance. I think you will find that a habit of slight intemperance is much worse than occasional great excesses; that regular soaking is worse than irregular carousing; probably because of the steady impairment of the blood and of all the textures to which the soaking leads. Of course, you will keep your hands off notorious drunkards, unless you are driven by the stress of a strangulated hernia, or a stopped windpipe, or something leaving you as little choice as these do. But you must be on your guard to detect a good deal of drunkenness of the soaking kind which is not notorious and not confessed. Be rather afraid of operating on those, of whatever class, who think they need stimulants before they work; who cannot dine till after wine or bitters; who always have sherry on the side-board; or are always sipping brandy-and-water; or are rather proud that, because they can eat so little, they must often take some wine. Many people who pass for highly respectable, and who mean no harm, are thus daily damaging their health, and making themselves unfit to bear any of the storms of life. Especially they are doing so, who increase their stimulants while they diminish their food. This is a fatal error, much worse than that of both eating and drinking in excess.

On all such as these, operations are more than doubly hazardous. Of course you may hear of wondrous escapes from dangers and, on the credit of a few exceptions, silly proverbs are made about the impunity of drunkards; but the general rule is certain. Every risk of an operation is increased in the habitually intemperate; they are, above the average, liable to every one of all the sources of danger and of death.[1]

I have had no sufficient experience among teetotalers to enable me to speak with any certainty of their capacity for bearing operations. I cannot doubt that a patient trained, all his life, to habits of rigid temperance would bear injuries of all kinds much better than the average of men, including drunkards; but people of this sort are not commonly those with whom you have to do under the name of teetotalers. These are, for the most part, either persons who have always drunk moderately till, for example's sake or some other motive, they have given up all stimulants; or else, such as have been intemperate or, to say the least, imprudent, in their manner of living, and have then wholly changed their habits, and lived without any stimulants whatever. Of the first class, I do not know whether they are better or worse than those who

[1] See Note IV.

have been and still are always temperate; but of the converted drunkards I have no good opinion when they come to be the subjects of surgery; for they seem to retain the bad liabilities of the intemperate long after they have given up their bad habits. I would not adopt the opinion that I have heard some express, that teetotalers are worse patients than drunkards; but I should always expect that a very long period of reformation would be required to free a man from the damages he has sustained by intemperance.

Over-eating is not commonly supposed to lead to any such risks of life as over-drinking does; yet I believe that you will find, in operative surgery, that among the habits that increase the risks of life, this may stand not far off drunkenness, especially if the over-eating is of meat and other nitrogenous foods. I am led to believe this from several cases that I have observed, and I think that there are large evidences of it. You know that the general results of operations in provincial hospitals tell of a smaller mortality than in the hospitals of London and the largest towns. The difference is commonly ascribed to differences in the purity of the air, and other advantages of that kind in the comparatively rural districts. I believe that much more of it is due to the differences of habits in the several classes of patients.[1] The differences are many; but one of the chief of them is that the poor in the agricultural districts eat far less meat than those in large towns do, and are, by comparison, less fed though probably not worse fed; and you may frequently observe that patients who come to us from agricultural districts bear operations in all respects better than Londoners who are submitted to the same proceedings. Of course many things concur to make the differences of constitution between a town- and a country-population; but I am satisfied that among these things a very potent influence is exercised by the difference of diet. And the differences that we may thus see, appear to be illustrated by what one hears of the results of operations upon the natives of India and other Eastern countries, whose diet is almost exclusively vegetable. Almost any amount of injury, it is said, may be inflicted on them and not be followed by the destructive mischiefs which occur in Europeans under the same circumstances. They are defective, it is said, in healing power; but recover with comparative certainty, however slowly, from operations of the greatest magnitude. A common expression about them is, 'You can't kill them.'[1]

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[1] See a paper by Mr. Callender in *St. Bartholomew's Hospital Reports*, vol. v. p. 244 et seq.

It may sometimes be a question whether long courses of medicines, such as mercury, iodide of potassium, arsenic, alkalies or others, alter the ordinary risks of operations performed during or soon after the course. I have too little experience to answer the question; but am disposed to say No. I tied the external iliac artery of a gentleman who had taken about 900 grains of iodide of potassium in the few weeks before the operation. No harm followed either in this case or in another similar to it in which I assisted at the operation.

There are many patients to whom you cannot assign a morbid constitution, but who are feeble in all their processes. No organ, it may be, works wrongly; but no organ works with due power. Many children are in this condition, and some adults, whose condition has been admirably portrayed by Dr. Chambers in his book on Italy.[1] They are not always bad subjects for operation. Repair will probably take place in them as feebly as any other vital process; but I believe they are not particularly liable to those diseases after operations from which the greatest risks arise. Children of this class you should be cautious of operating upon for hare-lip or other such defects as do not urgently require interference; and in adults, if you can defer operations to some period of better health, you should do so; but all this for fear of local failure rather than of incurring any unusual risk of life. For in the management of these, as of all cases, you will find that the chief vital risks of operations are not through mere defects of power, but through diseases. The measure of danger is not in the proportion between more or less of vital force and more or less of exhaustion, but in the amount of liability to real diseases of the blood and tissues.

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[1] See Note V.

You often hear me speak of patients as 'cold-blooded.' I do not know that the whole of their blood is less warm than that of ordinary persons, but some of it is, for their hands and feet are seldom or never naturally warm; and some of them feel, when you touch them, as cold as reptiles in the same climate—their hands and feet feel as moist and damp as toads and frogs. The circulation in all these cold parts is of course very slow, and probably it has not a due velocity in any of their textures; for wherever you can see vascular parts in them they are of duller tint than they should be, dusky and with a purple hue rather than a rosy one; and with these signs you find small pulses, and general indications of slowness in all vital processes. They digest slowly, and are very prone to constipation; and the women among them are apt to menstruate disorderly, and to be liable to headaches and backaches and a variety of nervous symptoms. People of this kind are so numerous that you will do well to look-out for them among your cases, and to treat them specially with iron, with particular regard to this cold-bloodedness and slowness of life. They are not bad subjects for operations; rather, I should reckon them amongst the good ones; for they have always seemed to me singularly little liable to fall into the troubles of erysipelas or pyæmia or any other disorders of the blood; and the healing of their wounds is not apt to be interrupted. Observe their defects; minister to them with warmth and good food, but not with stimulants or great eating, and they will do as well as any you will have.

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[1] *Climate of Italy*, 1865, p. 8 et seq.

And, to finish this account of the influence of diseased, or disorderly, constitutions on the results of operations, let me tell you of the people that are commonly called 'nervous.' I do not refer to those who manifest disease in any part of their nervous system, but those who are exceedingly sensitive, mobile, and excitable, whether in their sensitive or motor organs—who are very emotional, and with their whole cerebro-spinal nervous system altogether too alert. You will find them and their friends always apprehensive of the results of operations; they will tell you that they are so nervous they can bear no shock; and they look with the greatest apprehension upon the infliction of any injury. All this is fallacious. You may be surprised at observing how very little influence upon their organic processes this excessive vivacity of their cerebro-spinal system exercises. Time after time I have found patients who have complained of agonies in their wounds, and I do not doubt have felt them, but whose pulses have been unmoved. They have had enormous pain, but no fever, no single sign of disturbance of their general nutrition; they have had spasmodic movements of their limbs, tremblings, and rigors, but no mischief has followed. Besides, the same mobility of mind which makes these patients very fearful before an operation makes them hopeful directly after it; and amongst all the people that can in any sense be called invalids, I know none who more generally pass through the consequences of operations with impunity than do those who are commonly called nervous, and whose nervousness consists, if I may use the expression, in a too great vivacity of their whole cerebro-spinal system.

Sometimes you may be forced to operate during the continuance of an acute disease; and, although the circumstances of the case may give you little choice as to whether you should operate or not, it is well to be aware of the degree in which the acute disease may influence the result of your proceedings.

Patients with ague bear operations as well as others of the same class; but, in the course of their recovery, they may alarm you by having one or more ague-fits, exactly resembling those that precede pyæmia. And more than this; if a patient has ever had ague and, even many years afterwards, you perform an operation on him, ague may seem to be renewed in him at some short time after the shock, or loss of blood, or whatever other damage he may have sustained. I have so often noticed this that, whenever I hear of severe rigors following any operation, I ask for a previous history of ague; and I have sometimes found that the patient has almost forgotten it in the long lapse of time since he suffered from it.[1] Even beyond this: patients who have never had ague, or, certainly, have not been aware of having it, may show signs of it after operations. Four days after undergoing lithotomy, and not after the first or second time of passing urine, a clergyman had a severe shivering, followed by intense heat and sweating. Pyæmia seemed to be at hand, but when I asked about ague he said he certainly never had it, but he had given great quantities of quinine to his aguish parishioners. Large doses of quinine were given to him: he had no more shivering, and recovered without another sign of pyæmia. Similarly, about a week after amputation of a breast, a lady near 50 years old had chills followed by very high temperatures and sweating every evening. She, too, had never had ague; but this was because, as she said, her mother was always giving her quinine when, as a child, she lived in an ague-district.

The question of amputation often arises when the patient is suffering with erysipelas, or with that spreading inflammation of the cellular tissue which is closely akin to erysipelas. I have often said to you that I look upon a secondary amputation as a confession of either a mistake or a disappointment.[2] Either a primary amputation ought to have been done, and by mistake it was left undone, or if, for any apparently sufficient reason it was not done, the necessity of doing the secondary amputation implies the disappointment of just hopes. I have spoken with this disparagement of secondary amputations because the necessity for them is so likely to come when the probability of success is reduced by the operation being performed while the patient is in acute disease. I cannot tell you the numerical increase of risk; but I believe that the mortality after amputations during erysipelas, or spreading cellular inflammation, would be found very much greater than that of primary amputations, or of secondary amputations done for merely wasting suppuration or irreparable local damage. I scarcely know any set of cases in which I have operated with less hope than in those of compound fracture, or similar injuries, in which the question is raised whether a patient, who seems dying with acute disease, may have what is called a chance of his life by amputation. In the large majority of such cases the chance by operation seems to me less than that of keeping the patient alive by the ordinary treatment of erysipelas, or whatever other acute disease he may be suffering with.

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[1] See Note VI.

[2] See note at the end of the Lecture on the 'Calamities of Surgery.'

What are the chances of recovery from operations done during pyæmia? I think I can answer safely, that with acute pyæmia, in which the patient has rigors once or more in a few days, and profuse sweatings with very rapid pulse and breathing, and with delirium, and rapid wasting, or with dry tongue and yellowness of skin, or any considerable number of these symptoms, the probability of good is so small, and of harm so great, that you should refuse to operate. But in chronic pyæmia, when the disease requiring operation adds largely to the exhaustion from which the patient is suffering, the removal of the disease may be very proper. Suppose, for example, a patient with a crushed foot, or a crushed hand, in whom signs of acute pyæmia have recently appeared. Whatever be the state of the injured part, I would not add the damage of an amputation to the burden that the patient already has to bear. But if the pyæmia have become chronic, attended with only wasting and sweating and the formation of abscesses here and there, and if the injured part be manifestly useless, or a source of irritation or of exhaustion, the mere existence of pyæmia in the chronic form would not turn me from the operation required by the part.

The occasions for operating in any other than these acute diseases are not many, but in diphtheria or croup you may have to perform tracheotomy, and during peritonitis a hernia may require operation. These are all cases of necessity, and their results are not materially affected by the general acuteness of the disease. If their local good is accomplished, the healing of the wound and the recovery of the patient may occur as in any ordinary case, unless, indeed (which I have never seen), a wound, after tracheotomy,[1] should itself become diphtheritic.

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[1] See Note VII.

LECTURE II.

In the last lecture I told you what I believe about the various degrees of risk incurred by persons of various ages, habits and constitutions when submitted to surgical operations. The questions involved in trying to estimate these risks are very difficult, even in their simplest forms; and the difficulties are subject to manifold increase, when, as commonly happens, varieties of habit, constitution and general disease are variously intermingled. Nor can they be limited even within these complications; for often we have to operate when local diseases add their interferences to those of peculiarities of constitution or of habits.

I refer to all these difficulties, not to magnify the value of anything that I can tell you, but to justify my speaking doubtfully on many points, and talking of belief rather than of knowledge. I must thus speak, especially, when referring in this lecture to the influence of local diseases on the risks of operations; for of these no man's life can be long enough, busy enough, and thoughtful enough to enable him to gather such experience as can justify positive assertion. I cannot pretend to have attained to more than such belief as, being vague, we vaguely express by speaking of impressions more or less strong. I might doubt whether such beliefs should be promulgated, if it were not certain that much of our most useful practice is founded on similar beliefs. We may be very ready to call them knowledges, but they do not deserve the name; and yet we must practise in accordance with them; just as in all the affairs of ordinary life, when certainty is not attainable, we are bound to act, if at all, upon the highest probability that we can discern.

With this understanding let me tell you what I can of how various local diseases influence the results of operations.

Amongst affections of the organs of digestion, I have no experience whatever of the influence of organic disease of either the stomach or intestines. From ordinary gastric dyspepsia, associated with a moderately healthy condition of other organs, you will very rarely find any serious results on the consequences of operations. I have seen nothing worse than vexation from flatulence, heartburn, and the like symptoms of what we suppose to be mere functional derangement of the stomach. They need that the patient should be carefully dieted, but nothing more. But I believe that dyspepsia may become a serious complication in any of the very few cases in which large feeding is necessary, especially if it be such dyspepsia as is often attended with vomiting You should always inquire about such symptoms as even occasional vomiting; for, besides those troubles that may arise after operations, I think that of an untoward bearing of ether and chloroform must be reckoned as among its risks. Certainly, some of the worst effects of chloroform I have seen, with long-continued vomiting and the consequent great exhaustion, have been in persons in whom it appeared to have aggravated a natural irritability of stomach. Remember, too, what I have said about feeble digestive powers in old persons, and how their stomachs are apt to fail after operations.

Among the diseases of the intestines, dysentery and, even, the effects of dysentery long past, prove themselves very grave complications. They were so, especially, in the Crimean war; happily, in civil practice, we very rarely have to consider them.

The nearest likeness to dysentery which we see is acute diarrhœa. Except in cases of urgency, you will, of course, never operate till this is checked; but in urgent cases, especially in those of irritative fever with cellular inflammation, diarrhœa adds largely to the risk. And so it does, I think, in patients in whom it precedes the descent of a hernia that becomes strangulated. This is a more frequent event than you might suppose, and it seems to me always dangerous when, soon after the strangulation of a hernia is relieved, the bowels act irritably and with copious liquid evacuations. It is one of the many instances in which you will find, when dealing with strangulated hernia, that you are not dealing with merely mechanical difficulty in the intestines, but with some disease which has produced or favoured the strangulation, and upon which your operation has no good effect whatever. Besides, speedy movements of the bowels after operations for hernia are, I think, always injurious.[1] They destroy the quietude which is requisite for the recovery of all the disturbed and damaged parts.

An accidental diarrhœa is only serious when it happens in persons much exhausted. In those that are habitually subject to diarrhœa, if an attack of it happens after an operation, it is not likely to do any harm. But in children and in old people, and in those that are exhausted, diarrhœa may be very serious; especially it may be so in children, in whom it comes on after operations of all kinds, and in whom you must check it abruptly with opium or any other means.[1]

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[1] See Note VIII.

I hardly need tell you that it is well to have a patient's bowels properly open before an operation (everybody looks to that), and to see that, as far as possible, the intestinal secretions are healthy. The tradition of this necessity is not likely soon to fade-out at St. Bartholomew's. And if I do not refer to the subject more fully, it is only because the rule for it comes within the much larger rule that, so far as may be possible, the secretions of all the organs of the body should be set right, or kept right, before a patient is subjected to any risk from injury. But, respecting constipation, I think its importance has been over-stated. Repeatedly, after operations for hernia, I have observed that no patients do better than those in whom, without any sign of abiding strangulation, the bowels do not act for four, five, or even more days after the operation. And in cases of operation for fissured perineum and vesico-vaginal or recto-vaginal fistula, in which one used formerly more than now to keep the bowels at rest for many days, I never saw any general disturbance of the health due to the mere inaction of the bowels. It was, indeed, often remarkable that while the action of the bowels was arrested for ten, twelve or more days, the patient passed through the ordinary process of recovery from the operation in exactly the same manner, with the same reaction, the same recovery from reaction, and the same gradual regaining of power, as those do whose bowels act daily. From mere constipation, therefore, you need not anticipate any generally bad result. I do not recommend you to be altogether unmindful of it; but you need not, as some do, consider it the matter of chiefest importance. There is, however, a risk from constipation against which you must very carefully guard. In some people a difficult or very copious action of the bowels is an exhausting process; and in these the exhaustion, after many days' inaction, may be a serious matter. Therefore always give directions that in their cases and, indeed, in all cases after constipation, wine or food is to be given after or even during any great action of the bowels. I believe I have known a life lost through neglect of this rule. The patient was a very feeble person whose breast had been removed. She was habitually costive, and her bowels had not acted for five or six days. Then, after some slight aperient, there came a profuse action. Shortly after, she had a rigor; and then pyæmia set-in of which she died. And in another case, after compound fracture, a patient, who seemed a healthy man, twice, after considerable evacuations of the bowels, had such collapse as seemed for a time to imperil his life. Guarding yourselves against these risks, I think you may look upon constipation as an inconvenience to the patient rather than any serious addition to his risks.

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[1] See Note I.

Among diseases of the digestive organs which occur in sufficient frequency to affect the risks of dying after operations, I suspect that none are of greater importance than those of the liver. Of course, one's experience of them cannot be sufficient to define the several degrees of risk connected with each disease. As a general rule, however, you should be cautious in operating upon those whose biliary secretions are habitually unhealthy; or those who have been often jaundiced; or those who bear that sallow, dusky complexion, with dry skin, and dilated small bloodvessels of the face, and sallow, bloodshot conjunctiva, which commonly tell of what is supposed to be an 'inactive liver.' Many of this last class are not temperate; many are sedentary and indolent; many suffer habitually with hæmorrhoids; probably all have some abdominal plethora; probably, all their digestive organs act as ill as their skins do. But whatever we may guess to be the special defect of these organs, you need not doubt that operations upon those who have them are attended with more than the average risk, and that when you are obliged to operate you must do so with more than ordinary care and caution. And there are graver diseases of the liver than these, which you must look to; especially the enlargement of the liver, whether amyloid or fatty, which is not rarely coincident with chronic diseases of the bones in children and young persons. This is undoubtedly a frequent cause of death after resection and amputation, from which in healthy children the mortality is so small. In some, it merely seems to hinder recovery, and they die slowly exhausted; in some, I believe you will find it the chief reason for such defective healing as leads to secondary hæmorrhage. The fear of consequences such as these may give you the rule never to operate for chronic diseases of bones or joints without a specially careful examination of the liver; for although its diseases may be comparatively most frequent in young patients, they may be found at any age.

Diseases of the heart are, on the whole, much less serious hindrances to recovery from operations than you might suppose. Doubtless, patients with very weak fatty hearts are in some greater danger from chloroform than others are; but when it is cautiously given, even these may take it safely; and I have never heard or seen anything that would make me think the administration of chloroform specially dangerous in any such patients with diseased hearts as a reasonable man would think of operating on. I have known it administered to patients with considerable valvular disease without any appearance of danger; and certainly, in any such case, the risk of chloroform would be less than that of the pain and alarm attending any considerable operation performed without it. But there is no need to give chloroform: and ether is quite safe.

The shock of an operation has a greater than its ordinary risk in one whose heart is feeble, or embarrassed by valvular obstruction; and those with feeble hearts will ill bear much loss of blood. But when these risks are past, patients with diseased hearts have appeared to me not prone to any dangerous complication. And there is probably good reason for this—namely, that as soon as the shock of an operation is over, less than the natural force of heart is sufficient for all the purposes of life of a patient who lies quietly in his bed, or whose activity is reduced much below that which was customary with him. Do not let me seem to say that weak and diseased hearts are trivial matters in these or in any other cases. I would only have you believe that they are not such grave affairs as, at first thought, or without experience of them, you might suppose. At any rate, I have never seen anything to make me suppose that defective circulation makes a man specially liable to pyæmia or any other of the chief perils after operations.

While speaking of diseases of the heart, let me tell something of certain manners of its acting, even when we believe its structure to be healthy. People with slow pulses bear operations just as well as those who, in all other respects than that of their heart's action, are like them. And people with habitually rapid pulses are not bad patients if the rapidity of the pulse be not associated with some organic disease. Especially, you will find a considerable number of children and young persons, chiefly sensitive girls, whose pulses are rapid enough to frighten you. Observe whether the respirations are in the same proportion rapid; if they are not, the respirations, and not the pulse, must be your guide in judging what is the patient's state. Many a time I have pointed out to you a pulse beating 120 or 140 times in a minute and said that it meant no mischief because the respirations were not more than twenty or twenty-five. And the same may be said of some who, with some strangeness of nervous system, have hearts that rapidly and widely vary their rates of acting. I had a patient, about twenty-five years old, with a pulse usually at eighty. I amputated his foot for strumous tarsus, and, in any mental disturbance, his pulse would be from 140 to 160, and was rarely under 120. His temperature ranged from 101° to 105°; but his respirations never exceeded twenty-four; and his recovery from the operation was quick and unhindered.

There is a set of cases in which you must always apply this rule of checking the indications of the pulse with those of the breathing—namely, cases of hæmorrhage. After large bleedings, when the patient recovers from their immediate effects, the pulse is usually hastened, and the breathing is retarded; so that with a pulse of 120 or more there may be not more than ten respirations in the minute.[1]

Mere irregularity of the pulse, if it be habitual and not connected with valvular disease or degeneration of the heart, does not, so far as I know, affect the chances of recovery from operations. If the structure of the heart, as well as its functions, be disordered, you must judge according to such rules as I have just stated.

The influence of diseases, or rather of degeneracies, of arteries is not easy to measure, for the cases are comparatively few in which one would have to operate on patients whose arteries are degenerate and in whom other important structures are sound. In the large majority of cases, degeneracy of arteries coincides with that of many other organs, and to these, rather than to the state of the arteries, the greater risks must be ascribed. In the large number of old persons on whom one has to operate for hernia, or for cancerous growths about the face and skin, one sees no reason to suppose that arterial degeneration is in itself a very grave matter; nor, again, in lithotomy. But the case is very different with amputation, especially of the lower extremity. Here one can have no doubt that the degeneracy of the arteries in the limb brings great peril with it. Primary hæmorrhage is rendered more difficult to control, and recurrent and secondary hæmorrhage are more frequent, and all the worse because the patients are those in whom large losses of blood are dangerous. Moreover, if these risks are survived, the feeble nutrition of the wounded parts gives opportunity for spreading suppurations; and all the healing processes are slow; and hereby all the perils of the case are prolonged. And when you think of slow healing in any amputated limb, remember that, amongst all the textures of the limb, few are less favourably constructed for healing than are the tissues of the arteries. Their healing after wounds is, as you know, difficult and sometimes interrupted even in the healthiest persons. Much more likely is it to be so in those whose textures are degenerate; indeed, if you look at a thoroughly degenerate artery, you must wonder that healing should ever take place. Out of this difficulty of healing comes a great part of the reasons why amputations of the lower extremities are so fatal—so nearly hopeless—when performed for injuries in very old people. I speak, here, only of cases in which there is general degeneration of arteries. Special dangers are connected with the disease of a single artery requiring ligature, as for aneurism; but into this, which is of itself a very large subject, I cannot now enter.

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[1] It hardly need be said that these lectures were delivered before I had sufficient experience with the clinical thermometer to speak of its use in these and the like cases.

Diseases of the veins are so generally local that they have little bearing on any question as to the general risks of operations. I believe that it adds not a little to the risk of an amputation if you have to cut through varicose veins; but whether the diffuse phlebitis, which one has to fear, is more often connected with previously diseased veins than with previously healthy ones, I cannot tell.

Diseases of the respiratory organs bear with very unequal and uncertain force on the risks of operations. Of course one can speak only of the influence of the more common and chronic diseases; for no one would think of operating during any acute disease, unless in dire necessity.

Chronic bronchitis, or that which has more often to be considered, a great tendency to bronchitis, is a grave complication; not because it originates serious mischief, but because, if such mischief come from other sources, the bronchial difficulty adds very largely to the danger. I have never seen reason to believe that bronchitis renders patients more liable to erysipelas, pyæmia, or any such disease; but if these happen, or indeed if any complication comes on after an operation, the imperfect respiration, the restlessness, the loss of sleep, and all the other troubles of bronchitis diminish, by many degrees, the chances of recovery. And so, too, bronchitis must be feared especially in old people whose convalescence is not quite complete, and still more in those among them who have had erysipelas about the head and face. All these things must make you reckon that a patient habitually subject to bronchitis or, I suppose I may say also, a patient with emphysematous lungs, is one in whom all operations are extremely hazardous, and all the more so because few elderly people who have emphysematous lungs are quite sound in their other internal organs. The guards which you must set in any such case in which you have operated are evident. Especially you must look to the air; for these are the cases, more than any others, in which you must try to accomplish the difficulty of providing air which is at the same time pure and warm and moist.

But the great interest of the diseases of the respiratory organs, in their relation to operative surgery, is in the question as to what may be done with a patient who has both phthisis and some local disease that can be surgically removed, or in any way cured, by an operation.

It has often been suspected that the removal or cure of some local disease of a phthisical person may badly influence the disease of the lungs. I know no sufficient evidence for such a suspicion, if it be meant that phthisis is made worse by the mere fact of the cure of any other disease; as if the diseased part were something like an excretory organ, the removal of which would throw an increased labour of excretion on the lungs or some other part. But, certainly, the fever and other accidents that may follow an operation may do special harm to a tuberculous patient. You saw, not long ago, an illustration of this. A man was under my care with a large chronic abscess in his axilla—a strumous abscess it might be called. It was emptied; and after refilling and a second emptying, the sac was injected with diluted tincture of iodine. This caused, as we intended, inflammation of the sac; but with this there came general feverish disturbance, and through this, as it seemed, the man was found one day suddenly almost deprived of the power of speech, and then other cerebral symptoms followed, and after a few days he died insensible. His death was due to inflammation of part of his cerebral membranes, where tubercular deposits were found. These had been quiet so long as his general system was calm, but with the excitement of fever they became fatally active.

The fear of such a calamity as this should dissuade you from all operations of mere convenience, and from all measures of what may be called decorative surgery, in phthisical people; but it should not always dissuade you from operations that will cure diseases from which they suffer much and by which their lives are wasted, as they are by fistula and diseases of bones and joints.

In these and the like cases, the main question is, whether the local disease—say, a diseased joint—is weighing on the patient so heavily, or aggravating his phthisis and shortening his life so much, as to justify an operation attended with more than the average risk of life and health. Of course, the weight of each local disease must be separately judged; but in reference to the risks of operations, cases of phthisis must be divided into two classes which, by comparison, may be called acute and chronic, or progressive and suspended, phthisis.

In all cases of acute or progressive phthisis great risk is incurred by almost every operation. The risks of the excitement of many days of feverish disturbance, and of loss of food, and of pain, and all such consequences of operations, are much above the average; to say nothing of the special chances of exciting some pneumonia. I cannot doubt that I have seen patients whose acute phthisis has become more acute, and others in whom the early stages of phthisis were accelerated, by the consequences of operations. Therefore I should follow the rule of never performing any considerable operation, if I could help it, on any person whose phthisis is in quick progress. Small things may be done on them for the relief of great distress or pain; but larger things had better be left undone, even if they should ever be done at all.

The case is very different with chronic and suspended phthisis. In these it is often advisable to incur the somewhat increased risk of even a large operation, in order to free the patient from the distress and wasting of a considerable local disease such as that of a joint; and I should be disposed to say that it is always advisable to cure, if you can, a small disease such as fistula. I say if you can, for you will often be disappointed. In the tuberculous, as in the strumous, your wounds will remain for weeks unhealed and, perhaps, be unsoundly healed at last. Still, as to the mere question of operating, I have seen so many advantages accrue to patients with chronic phthisis from the removal of limbs with joint-disease that I am disposed to speak strongly as to the general propriety of whatever operations they may reasonably require. For instance, I still sometimes see a man about the hospital from whom I remember that, at least fourteen years ago, Mr. Stanley removed the left lower limb above the knee for disease of the knee-joint. He was the subject of chronic phthisis at the time of the operation; and the question was carefully discussed whether amputation should be performed on him. It was decided on; and though he has been phthisical ever since, and always very poor, yet he is still well enough to pursue some quiet occupation. I can hardly think he would have been doing so at this time, if he had had to bear at once the burdens of both tubercular lungs and a painful knee-joint.

There is a risk, common alike to the progressive phthisis and the suspended, that by long-continued confinement to one atmosphere, such as must happen after the excision of a joint, you may put the patient into that state of quiet gradual impairment of health which is so terribly favourable to the progress of tubercular disease. Among all these risks you must make the best choice you can. And there is one point in relation to them about which it will be well to speak. Patients with long-standing strumous disease often look phthisical, whether they have tubercular disease or not. And, occasionally, you find one with cough and rapid breathing, and many other symptoms so like those of phthisis, that nothing but the most exact stethoscopic examination can persuade you that the lungs are in their structures sound; yet all these symptoms may be removed by the removal of the diseased part. Many years ago, I had a young lady for a patient with strumous disease of the knee-joint, of six or seven years' duration; and for many weeks she had had irritable cough at night, quick pulse, and rapid breathing, and all the signs which on a superficial examination might have led to the belief that she had phthisis. Yet no tubercular disease of the lungs could be detected, and I removed her limb above the knee. Up to the night before the operation she had been restless with coughing. After the operation it was doubtful whether she ever coughed again.[1]

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[1] The question of operating for fistula in phthisical patients is fully discussed in Curling, *Diseases of the Rectum*, 1863, p. 102; H. Smith, *Holmes's System of Surgery*, 2nd ed., vol. iv. p. 832; Allingham, *Diseases of the Rectum*, 1871, p. 39; Erichsen, *Science and Art of Surgery*, 5th ed., vol. ii. p. 515. The general conclusion from their statements is similar to that of the lecture.

LECTURE III.

Certain diseases of the kidneys increase the risks of operations more, I think, than do the equally chronic diseases of any other internal organ. And the chief of these diseases are those which are associated with the constant existence of albumen, or with the frequent or constant presence of pus, in the urine. In the first group, those of which we commonly speak as cases of albuminuria, the risks of erysipelas and of pyæmia seem to reach their climax. Not that I know this from having frequently operated on patients thus diseased. We are too cautious for this; and, as you know, no patient with any chronic ailment goes from my wards into the operating-theatre without a previous examination of the urine. But you may learn it from the frequency with which accidents, such as scalp-wounds, compound fractures, and the like prove fatal in those who are subjects of albuminuria. All the dangers of which you are taught in medical lectures as to the tendency of albuminuria to generate pericarditis, pleurisy, and other internal inflammations, are proved emphatically when the patient's general health is disturbed by the consequences of injury, whether accidental or by design. I do not know by how many times the risks of a given operation are increased in any patient who has albuminuria, but I do know that you will find it a safe rule never to perform any operation without an acquaintance with the manner in which the patient's kidneys discharge their function; and never to perform one, except under something like compulsion, on a patient whose urine is constantly albuminous. I do not say that you should never operate on such a patient, for the exigencies of the local disease may justify you, as they may justify you in operating in advanced phthisis; but be clear that you operate against heavy odds; for even if the patient do not die with erysipelas, or pyæmia, or some other form of diseased blood, he will be apt to linger with a wound half-healed, till at last he dies of his renal disease just as if you had done nothing.

You saw a patient of mine, in whom we were certain of the existence of advanced granular disease of the kidneys, with albuminous urine, die last year. A poor woman who, ten years before, had one limb amputated below the knee for chronic ulcer of the leg, came with the remaining limb so badly ulcerated, and so hindering her poor means of living, that she begged me to remove this leg too. She had recovered from one amputation, and had such comfort in consequence of it that she begged me to give her the possible advantages of another, at whatever risk. After many vain attempts to improve or palliate her condition, I removed the limb; and then you saw how, week after week, the stump remained unhealed, and how, though she was relieved of pain, and remained hopeful to the last, she became more and more feeble and œdematous, and died, just as she would have died if she had retained her limb—in greater comfort indeed, but not a day later.

The suppurative disease of the kidneys which is of most importance in operations, is that which many call pyelitis—a suppurative inflammation of the lining membrane of the pelvis, calyces, and larger excretory ducts of the kidneys, extending to and widely disorganising their tubular structure. Its chief interest is in its relation to lithotomy and lithotrity and the various operations for urethral stricture. In all of these it is a complication of the gravest kind; and in all of them you must inquire carefully, not only into the mere existence of pus in the urine, but as to its quantity and probable source. If you can convince yourselves that it comes from one or both kidneys, you must regard the case, whatever be its nature, as one of more than ordinary gravity. Pus from the bladder is a comparatively unimportant thing; it means only a local mischief which local treatment may, perhaps, cure; but pus from the kidneys may, and commonly does, mean that these which, in reference to recovery from operations, are, I believe, the most important excretory organs of the economy, are inadequate for their work. If pus is coming from them, they will certainly not be excreting their due quantity of the proper constituents of the urine; and, at any disturbance, the patient will be apt to become the subject of the so-called urinary fever, in which the phenomena of ordinary traumatic fever are seriously complicated by retention of the materials of the urine in the blood. Now, in reference to lithotomy and lithotrity, the evidences of suppurating kidneys may be such as to induce you to advise the patient rather to submit to his disease than to risk an almost inevitably fatal operation. But supposing the case to be less grave than this, and that the removal of the stone is advisable even in the face of a large risk, you must choose between lithotomy and lithotrity. The choice is a very difficult one, and scarcely admits of general rules. If the stone be such an one as can be got rid of with one or, at the most, two crushings, I would prefer lithotrity. If it would require more crushings, I am sure lithotomy would be better. If the bladder be sound, or nearly sound, so much the better for lithotrity; if it be unsound, like the kidneys, lithotomy will be the safer operation, and may even be indirectly beneficial by providing, for the time, a ready discharge of the pus through the lower part of the bladder.

For the various operations for stricture, in cases complicated with this condition of the kidneys, there is one very plain and obvious rule: being unfit for cutting, these patients should be treated with the gentlest possible means of other kinds. And, by the way, let me advise you, in every such case, to satisfy yourselves, before proceeding to mechanical treatment, that medicinal treatment is really insufficient. Every year teaches me more and more plainly that a very large number of cases of stricture of the urethra are really not dependent on any fixed condition of the urethra, but upon mere swelling of its mucous membrane—upon just such swelling as, with chronic catarrh, narrows or shuts up one or both nostrils. Manual surgery should find little or nothing to do in cases such as these.

It may seem to some of you absurd to include catheterism among the surgical operations in which the general condition of the patient's health can have any material influence. And yet I will not omit it, for it is a much more important affair than in the beginning of your professional studies you are likely to suppose. None of the minor operations of surgery is so apt to be followed by serious mischief. Very many patients with stricture of the urethra are unsound, or, if not unsound, yet with uncertain and capricious health—dyspeptic, or gouty, or with kidneys which, if not diseased, have been very often disturbed in their action, and are, therefore, unsuited for any constitutional disturbance. You should, accordingly, be at the least very cautious in the use of catheters upon persons of whose general health you know nothing, and upon those who are unaccustomed to their use, and upon those who come to you with strictures which are only somewhat worse than usual by reason of some passing disturbance of their health. And the rules of caution may be twofold stronger when you have to deal with old persons; for a first catheterism has been the first step towards death for many old men. You must therefore be on your watch for the general signs of health in patients on whom you must pass catheters, just as in those on whom you would perform any cutting operation. Look upon first catheterism as involving a risk of troubles about as great as that of amputation of a finger or a toe, or the removal of a small tumour, in a person of the same age. A small risk, you may say; but it is not less than two or three per cent.; and the calamity of death, when it does happen, is aggravated a hundredfold by its coming without warning, and from what seems to all an inadequate cause.

By the way, let me tell you of a symptom which must make you especially cautious if you have to catheterise elderly or old men. If they are passing large quantities of pale urine of very low specific gravity, whether containing a trace of albumen or not, they will be in danger from even the most gentle catheterism. For this condition of the urine is often due to some advanced defect of action in the kidneys, and catheterism will be followed by inflammation of the bladder and the so-called urinary fever, and death will hardly be escaped.

As to diseases of the nervous system in patients who are to be the subjects of operations, I need hardly say that neither I nor anyone can have considerable experience in relation to the influence of organic disease of either the brain or spinal marrow. We do not often operate upon mad people, or paralytics; and what I can tell you is rather in relation to the influence of minor or paroxysmal disorders of the nervous system.

The healthiest nervous system, in so far as it may be judged of by the mind, is that in which a patient faces an operation quietly, and with a courage which is not too demonstrative. Cases are told, and some of them, probably, are true, and I have seen confirmations of them, which would make it very probable that an abiding gloom, or fear of death, or a foretelling of death, or an utter indifference to the result of the operation, are very bad states. But, after all, your estimate of the risks on any such grounds as these must be a vague one. A better sign is the capacity for sleep. If a patient can always sleep long at a spin, that is a good patient. In one of the most perilous operations for hernia with which I have had to do, a case in which the hernia had been reduced *en bloc*, and in which its return was effected with considerable force and disturbance of parts, I believe the patient owed his recovery more to his capacity for sleep than to anything else. He was a young bargeman, dull-witted and over-worked and, in his ordinary life, sleeping whenever he was neither working nor feeding. Shortly after the operation, he went to sleep; and he slept sixteen hours out of the first twenty-four, and in a scarcely less proportion of his time for two or three days afterwards; and he recovered, although he had acute peritonitis, for which I thought it necessary to put on nearly a hundred leeches.

You may have to operate upon insane persons, and in them you will be able to confirm the rule that is established by the observation of all who attend them, that they bear pain and severe local injuries with less distress or ill consequences than the sane do; but that they recover with great difficulty from chronic ailments.[1] Moreover, if you operate upon them you must take all the risks of their interrupting their own recovery by some insane whim or violence. I lost a patient after an operation for hernia through her first insanely refusing all food, and then insanely drinking enormous quantities of fluid, which brought on sickness.

Delirium tremens is an indication of a complexity of risks. The man who has brought himself to this condition by hard drinking, unless indeed it be the result of extreme but rare intemperance, is in all the risks that belong to drunkards, and besides these, his restlessness will constantly increase the local danger of his wound.

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[1] *See* Note ix.

I would, therefore, never perform any large operation, except under compulsion, on a patient already the subject of delirium tremens. I can hardly imagine the serious accident of which the risk in such a patient would not be increased by any serious operation. But you are more likely to have to do with these patients when they become delirious after operations. In this case you must do the best you can for them, according to the general methods of treating the disease; of which general methods I will only say that, the less you rely upon opium and the more upon good food, the less you subject them to absolute restraint and the more to quiet nursing, the better will be your chance of success.

Very rarely, patients become insane after operations or accidental injuries, just as women do after parturition. I long thought that the absence of anything like a parallel to puerperal mania was one of the few points in which the consequences of operations differ widely from those of parturition, with which, in many important characters, you know that they closely agree. But within the last few years I have seen cases in which the parallel seemed to be completed. In one such case, within two days after a compound fracture of the leg, an elderly woman, who had never before shown signs of insanity, became maniacal with merriment and sleeplessness, and so died exhausted, the broken limb having apparently little influence upon her state. In another case of compound fracture the patient became insane within a few days of the injury, and remained so till nearly the time of her complete recovery. I have known a case in which religious mania ensued quickly after lithotomy; another in which fatal melancholia followed an otherwise successful lithotrity; and another in which fatal acute mania followed erysipelas after a minor operation. Such events, however, are so rare that they need in no degree interfere with the judgment which you would form as to the propriety of any operation. Only under the strongest probability of insanity ensuing after it, would the fear justify one in dissuading a patient from that which might be necessary for his health or life.

Of the nervous, the highly neuralgic, the over-sensitive, and those with over-active brains and spinal cords, I have already spoken: and it may be enough if I warn you that you may expect, and should arrange for the chance of, epileptic fits in those subject to them, and of convulsions in young children. An operation may 'bring-out' from a nervous system, as well as from any other department of the economy, whatever is erroneous.

To conclude these questions of the influence of diseases of organs and systems on the results of operations, let me say somewhat of certain conditions of the blood to which I have not yet referred: chiefly of anæmia. It is not a bad condition in which to operate, unless it be, that, if anæmic patients fall into the risks of erysipelas or the like casualties, they are less likely to get out of them. Except for these risks, anæmic patients—who are best represented, perhaps, by those who have had large losses of blood from the uterus, or in frequent secondary hæmorrhage from wounded arteries—pass well through the dangers of operations. Their wounds heal slowly, but soundly; and they recover their health at least as well as any other anæmic patients do. I say expressly, 'secondary hæmorrhage from wounded arteries.' If you are dealing with a patient anæmic through secondary hæmorrhage late after an amputation, you must not forget that the secondary hæmorrhage itself implies some defect of the healing process, which may be due to some general unsoundness.

It is a general rule, and I dare say a prudent one, not to operate during menstruation. The best time is believed to be within a few days after a menstrual period. I do not know the grounds upon which this belief rests; but they are just of that kind which it is at least prudent to respect, unless in cases of real necessity. Still, I have seen no mischief occur in the few cases in which, by oversight or necessity, I have operated either directly before or during a menstrual period. The cases have not been many, but in none of them has any mischief ensued. Not infrequently the occurrence of the first menstruation after an operation is attended with much more discomfort than the patient has commonly endured; and in those who are subject to menstrual distress, symptoms of general disturbance, enough to excite alarm, may be associated with it. The probability of the advent of menstruation is therefore always to be considered in the case of anomalous symptoms after operations. And it may be well to mention that, after operations on the genital organs and the breasts, it is by no means rare for the next menstruation to occur some days earlier than, in the ordinary course of events, it would have done.

As with menstruation, so, much more, during pregnancy, you would not willingly operate. And yet, with the exception of the danger of producing abortion, I know no facts that would imply a greater than the average risk; and if we may suppose a similarity between patients pregnant and those recently parturient, we may believe them comparatively safe. The repair of a rent perineum is as good an example of the healing of a bruised and lacerated wound as you could well find. And, altogether, the recovery of the enormous majority of parturient women from a condition which, in many respects, is like that which follows surgical operations, may prove them very safe subjects. However, on this point pure surgical experience neither is nor can be large. We can only say that, while, on the one hand, it would be mere recklessness to operate on such patients without good cause, yet if good cause for operating exists, they may be treated very hopefully.

When women are suckling they will bear operations with no more than the common risk that might attach to persons who may be in comparatively feeble health. The mere presence of lactation seems to have no bearing on the matter. But an exception must be made, I believe, for operations on the breast. I never did one and, if I can help it, never will; and to this conclusion I should have come even if I had not read a case of fatal hæmorrhage from a breast widely cut into during active lactation.

Now, I hardly need tell you that what I have said is a mere sketch of a very large subject—far too large for me to complete. I would have you all work hard at it;

and a help to your doing so will be to change the usual mode of recording cases in which operations are performed. Usually, the account of the operation is nearly the end of the case, and is followed by a bare statement that the patient did well or ill. But, in most instances, after an operation an entirely new case begins; a case, not of disease, but of injury. Accordingly, you should begin an entirely new record; and day by day you should set down all the events that follow the operation. Most of what I have told you is founded on the reports of a large number of cases which I have thus watched and recorded in a tabular form.

By this method of study you may gain knowledge of the highest importance in your practice. Not only may you improve yourselves in the treatment of patients after operations, but, by seeing how those with different constitutions or local diseases are differently affected by the operations, you may learn how to prepare them. Even from what I have said in these lectures you may see that there can be no one sufficient method of preparatory treatment; no single rule of purging or cramming, of starving or intemperance. The only single rule is, to put each patient into the best possible health for bearing injuries; and this, as I have said, is not always the best health for hard work or pleasure. If I may venture on a large general statement upon such a point, I will say that each man's capacity for bearing a surgical operation may be best measured by the power of his excretory organs in the circumstances in which the operation will place him. But the means of regulating this power, or of increasing it, must be as various as are the patients themselves. You must study the whole matter very carefully; and I hope I shall not have wasted either your time or my own if I shall have enabled you to start from the point which, after many years' work, I have reached.

THE CALAMITIES OF SURGERY.

Two cases have occurred during the last week, which lead me to speak to you about what may be called the Calamities of Surgery, a subject of great interest, which you had better begin to study in early life; for the study of it, if deferred to later life, only leads to reflections which are useless and distressing.

Last Friday a patient died under the influence of chloroform. It was given with all customary care, and there is nothing in all the circumstances to which we can refer that would imply that anything was left undone that ought to have been done, or anything done that should not have been done. In the morning I had advised the chloroform for this patient, whose hand had to be put straight in order to avert the deformity that was being occasioned by disease of the wrist-joint. In the afternoon, when my house surgeon and a dresser were giving it, the pulse suddenly failed, and the patient sank and died. The friends would not allow a post-mortem examination, so the case affords us no useful information. But the fact that I want you to keep in mind is that notwithstanding all care, and all good intention, surgery shortened to a few minutes this woman's life that might have lasted many years. At the very worst she would have gone about for the remainder of her life with a crippled hand; but she might have lived to a good old age. She died; and died without any warning of her danger.

This is one of the calamities of surgery. It is one of the many cases that lead one to wish that something might be discovered or invented which should combine what, I believe, was the greater safety of sulphuric ether, the first and original anæsthetic, with what is the far greater convenience and facility of administration of chloroform. But till that substance is discovered we shall have to proceed in surgery with uncertainty; or rather with the certainty, that occasionally, we cannot tell when, some one whose life we are trying to prolong or ease will die, and die by the means that we use to save him from pain.[1]

The other case was that of a man on whom I operated for the removal of the head of the humerus. He came, you will remember, with his right arm almost completely useless and often very painful because of an unreduced dislocation at the shoulder. The dislocation had been unreduced for, I think, eighteen months, and there was no hope of replacing the bone by any ordinary means. The man himself was urgent that the arm should be made in some measure more useful and less painful than he now found it, and accordingly we decided on what seemed to be the only thing for his relief, excision of the head of the humerus, which by pressure on the brachial plexus appeared to cause the pain. I did that operation; and a few days after it pyæmia set-in, and in a few weeks the man died. There were many circumstances in this case to diminish the rebuke that one was bound to inflict upon one's self. The man was exceedingly urgent for the operation, and urgent rather against one's own suggestions; and, which was worse, after the operation, out of sheer wilfulness and obstinacy, he refused for a time all careful nursing, and absolutely refused his food, and so diminished greatly his chance of recovery. Nevertheless, the fact remains, that but for the operation this man might have lived for many years; he would have lived with an only partially useful right arm, but he would have lived, and been able to work and would have done some good for himself and others; but because of the operation instead of living many years he died in three weeks.

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[1] Since 1872 I have used only sulphuric ether or, for short operations, nitrous oxyde gas or ether-spray. The inconveniences of the ether are remedied by Mr. Clover's method of making the patients insensible with nitrous oxyde and then giving the ether.

Cases such as these ought to be very honestly considered by us all; for I venture to say that there is no surgeon in large practice, no surgeon to a large hospital, who has not once or more in the course of his life shortened patients' lives when he was making attempts either to prolong them or to make them happier. And this, you will observe, is not merely the case with capital operations. When a patient submits to a large operation, it is always for the remedy of something that will render his life either very miserable or very short; and to escape so great distress it is quite fair that a man should run great risk of his life. But these calamities occur, however rarely, in comparatively trivial cases; when the operation is not done for any consideration of prolonging life, but, it may be, of making life somewhat happier, or somewhat more useful, as in the amputation of a finger, the tapping of an ovarian cyst, the tapping of a hydrocele, the division of a cervix uteri, the ligature of a pile, the division of a fistula, the removal of a small tumour from the face or scalp. I have known deaths from all of these, and if you were to go over the whole list of so-called minor operations, you would find that every surgeon of much experience has either had in his own practice, or known in that of others, one or more cases of each that have proved fatal. If any man will remove with the knife, in a hundred instances, cysts from the scalp, I will venture to say that he will have one or two deaths. If any man will take in succession an equal number of cases of ligature of hæmorrhoids, the probability is that he will have one or two deaths. The puncture of an ovarian cyst, tapping it for the first time, is fatal in three or four cases in every hundred. It is not necessary, however, that I should recount all these operations to estimate, what indeed it would be quite beyond my power to estimate, the average mortality of each; that which is most important for you to understand is that, without very great care, you will certainly lose patients after minor operations and be severely blamed for the loss.

Moreover, these deaths, though they are the worst, are not the only events that ought to be reckoned as calamities of surgery. We ought to add to the list all those cases in which operations for comparatively slight diseases are followed by very serious illness, or by permanent damage greater than the disease; as when the removal of a finger leads to cellular inflammation of the hand and permanent stiffness of some part of it, or when after circumcision sloughing ensues, or after the removal of a scalp-cyst dangerous erysipelas.

All these things might be matters of no more than passing regret to us if they were altogether inevitable; if we could say that everything of this kind is purely accidental, a thing which no foresight could have averted; which came upon us out of circumstances over which we had no control whatever. But the truth must be fairly confessed: that these are not always accidents; and that often, when the calamity has occurred and we look back on the events that preceded it, we can find that the disaster was the result of some oversight or of some carelessness or want of judgment or of skill. Do not let me seem to imply that there are no cases of this class which we may call purely accidental. Calamities in surgery may come of things which nothing far short of omniscience could have detected beforehand. A fever may fall upon a man after an operation; for even minor operations put persons into conditions in which they are more susceptible of the infection of fevers than they were before.[1] We cannot guard against that, unless by refusing to operate during an epidemic. Tetanus may ensue after a minor operation; we have no power to avert that or even, in the smallest degree, to apprehend its approach. These and other causes of the kind and, still more, the negligence and recklessness of patients, would diminish by a considerable number the list of calamities for which we may seem blameworthy; but there would still remain more than facts enough to serve you for a warning that you can only by exceeding watchfulness avert the calamities that are apt to occur through a comparative want of care or of skill or of judgment.

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[1] See *Essay on Scarlet Fever after Operations.*

Let me tell you now some of the cases that I have known. They were happily not all in my own practice, and I need not say which were and which were not.

A man had albuminuria, and he had a small cyst on the scalp which it was thought advisable to remove. It was removed and erysipelas set-in, and of that he died. And then it was found that he had albuminuria; a condition which made him so liable to erysipelas or to pyæmia or to some form of blood-poisoning, that if it had been ascertained beforehand no prudent surgeon would have thought of operating.

Another person was a drunkard, on the sly, and yet not so much on the sly but that it was well known to his more intimate friends. His habits were not asked-after, and one of his fingers was removed because joint-disease had spoiled it. He died in a week or ten days with spreading cellular inflammation, such as was far from unlikely to occur in an habitual drunkard.

Another patient was very liable to large bleedings from small incisions. This was not asked-after; some small incision was made and he died through the feebleness consequent on hæmorrhages.

Another had a small tumour of the face, and was so feeble in his ordinary condition of health, that more care would certainly have suggested that he would not bear even a slight shock and small amount of hæmorrhage. He sank after the operation.

In another case sutures were, by plain mistake, put through the aponeurosis of the external oblique muscle after ligature of the external iliac artery. Infiltration of the first products of the inflammation following the wound ensued; the suppuration spread far and wide, and the patient died through its effects in a few days.

An old man, with an irritable bladder, and who was passing a large quantity of urine of low specific gravity, came complaining of certain symptoms of stone. He was carelessly and rather roughly sounded for stone, went home, had a shivering fit and acute inflammation of his bladder, and died in ten days. The sounding would not have been done if due care had been taken to examine previously the condition of his urine.

Another man in a similar condition had an inflamed urethra. He was catheterised, acute inflammation of the urethra followed, and then retention of urine, acute inflammation of the bladder, and through that, death. He ought not to have been catheterised until after some few days of rest.

And so I might still tell of cases operated on in which, after the event, it was discovered that more careful previous consideration of the case, or more skill, or more after-care would have saved a life that was lost, or would have averted some dangerous and painful illness or some permanent damage. It does rest upon us all to consider these things very carefully. We are all the more bound to consider them honestly and, if need be, with self-reproach, because these calamities are not such as the public can judge of. They are not instances of those gross negligences and carelessnesses which can be punished legally and openly. Nor is it indeed at all advisable or desirable that the public should know of these cases. They could not help us and they would form very wrong judgments about them. Indeed, in such cases the public just as often judge wrongly as rightly, and accord credit where discredit is due. I remember once, when assistant-surgeon to the hospital, I divided a prepuce that was acutely inflamed. The patient went home and bled furiously from the vessels of the foreskin; and then followed acute inflammation of the whole integument of the penis and of the scrotum, and sloughing extended to his groin. He was admitted into the hospital, and passed through great peril of his life. He did not die, but he was very near doing so, and he was long ill and in misery. Four weeks after, a man came to the out-patients' room to return thanks for the help that I had given him. I did not know him at first, and I said, 'What did I do for you?'

'Oh sir,' he said, 'if it had not been for that cut you made, I should have died.'

That was his firm impression; that if I had not made the incision, which was the sole source of his danger, he must have died of something very terrible which that incision just prevented.

Another case bearing on the same point, of the mistaken judgment of the public, was this; of which, however, I only know by hearsay. Many years ago, a distinguished surgeon at one of the London hospitals admitted, as one of the casualties of the week, a gentleman with a strangulated inguinal hernia. With great carelessness this surgeon cut right into the intestine, in the middle of the hernia. Fæces flowed out and all the miseries followed of a piece of intestine projecting from the wound and discharging its contents. The case excited considerable attention; it was always carefully watched, and at last the patient recovered. His impression of what had happened was that he had, by this very incision into his bowel, escaped some dreadful calamity; and that nothing but the most extreme skill could have either made the incision into the bowel or recovered him after it; and he presented the surgeon who had done this for him with a very handsome gold snuff-box. The surgeon proved himself quite worthy of the gift, for he used to show this gold snuff-box to prove the gratitude which the officers of his hospital were in the habit of receiving from the patients upon whom they conferred the great benefits of charity and skill.

We must then, I repeat, blame ourselves for these things and scrupulously watch ourselves; for the more the sufferers from these errors or defects of ours are helpless, the more it rests upon our consciences to stand in their place and help them. I will therefore take this occasion for putting before you some rules which you had better follow; rules by which you may be able to avert from yourselves the regrets of these calamities of surgery.

First of all, the consideration that you are liable to these calamities should be an incentive to the most earnest and continual study of your profession, that you may avert all avoidable ignorance; and to constant discipline in watchfulness, that you may overlook nothing that can contribute to a patient's welfare.

And you should study very carefully all of what are called the minor parts of your profession. Minor they may be with regard to each instance in which they have to be practised; but they become major if you multiply those instances together. I refer chiefly to the necessity of cultivating skill in dressing wounds, in the completion of operations, in the looking to all the seemingly little things that, after an operation, minister not only to a patient's comfort but to his welfare. Among the cases that I have to regret is one in which a patient of mine died from a piece of plaster being put on in the wrong direction. A young man had a tumour removed from deep in the back of his thigh; and at the end of the operation, I know not whether by myself or some one else, a broad strip of plaster was put round the thigh, completely encircling it, and over that, for some further means of security, a bandage. Next day the limb was swollen, but apparently not much more than it might have been swollen from ordinary inflammation following an operation. But, the day after, the limb was swollen much more; and the day after that, there was acute inflammation of all the cellular tissue about the wound; and then came hæmorrhage; and then the man sank and died. The sole cause of his death was the strip of plaster which was put round his limb and not removed for two days. From that time to this, I think no one has ever seen me put a strip of plaster round a limb, unless spirally. Small as such a thing may seem in the art of dressing, it cost that man his life. I tell the case that I may in some degree atone for the fault by hindering you from incurring the same risk. Attend then carefully to what are called the minor things of surgery; not merely to skill in operations, large or small; learn the habit of entering completely and fully into everything that may minister to the safety and comfort of the patient.

Next, let the liability to these calamities move you never to decide upon an operation except in consideration of the patient's interests alone. Let no thought of your own interest, or of your own reputation, have any place in the consideration of what is to be done for this or for that man. If an operation is not purely and wholly for the good of a patient, it should on no consideration whatever be done. When an operation is decided on, you may add a desire for your own reputation to the motives that will induce you to do the best you possibly can for the patient; but this, which is a very fair motive for the careful performance of an operation, is a very foul one in determining whether an operation should be done or not. I can imagine nothing that would add more to the remorse of a man who had fallen into one of these calamities of surgery than the recollection that he proceeded to the operation with some consideration of his own interest or of his own reputation.

Next, never decide upon an operation, even of a trivial kind, without first examining the patient as to the risks of his life. You should examine him with at least as much care as you would for a life-insurance. It is surely at least as important that a man should not die, or suffer serious damage, after an operation, as that his life should be safely insured for a few hundred pounds. Before any man's life is insured, he undergoes an inspection by at least one medical man, and possibly by a whole board of directors. At least an equal amount of inspection ought to be made for every man who is to be submitted to an operation: and this involves a general fair consideration of what the man's present health is, how he looks, what are his pulse and breathing, what he is in respect of temperance, what of exercise; whether he has ever had any serious illness, whether he is liable to minor illnesses: in short, in regard to what this sort of examination should be, you may take for guidance the papers which insurance-offices give to anyone who proposes to insure his life. They ask a variety of questions which enable you, on the whole, to judge very fairly what are the chances of a man living out to the full length of life, and all those chances should be considered before even a minor operation, which is not of urgency, should be done. And, in this respect, do not too soon take examples from your seniors, myself included, as to the manner in which we judge of a patient's fitness for an operation; because, what we can do in a comparatively short examination you cannot do. The ability to see quickly what is the general condition and character of a patient's health is the result of very long-continued study. It would be hard to tell you what are the successive stages of knowledge through which any man of experience passes before he comes to say, almost at a glance, what is the general health of a person presented to him; but the ability to do this is the result of several stages of knowledge, each of which has been carefully passed-through. It is the same kind of knowledge which you see every successful man exercising in his own craft; one of those special skills only to be acquired by careful and long-continued study; and till, by experience, you have attained such skill as to be able to decide questions of this kind in surgery quickly, you must compel yourselves to decide them slowly, and with a very careful study of each case that is presented to you.

If I were to count the number of preventible calamities in surgery that I have known, I should find the majority of them due to the oversight of personal defects in the patients operated on; defects in the habits, the constitution, or the previous diseases, which ought to have been ascertained before the risk of the operation was incurred.

But, again, when you have decided on an operation, never make light of it. Never talk to the patient flippantly about its being what is called 'nothing;' a mere snip, a mere cut, a mere this or that. It never is so to the patient's own feelings; to patients an operation is always an important matter; and they are rather aggrieved than pleased on being told that it is 'nothing.' You need not alarm a patient; you may say that the risk of an operation is not greater than that which he would incur for much less sufficient motives. Most people, for pleasure's sake, incur larger risks than they would in a minor operation. They travel by express trains and they climb Alps; they hunt and shoot; and for no adequate motive they run across the crowded London streets; and for mere pleasure they expose themselves to dangers of fatigue and cold and indigestion and other risks of illness. So you may fairly guard yourselves, and give your patients a just measure of warning, by saying that the risk of a proposed operation is not greater than the risk of this or that thing which they willingly do for amusement. But, unless you are prepared to say that the risk is not greater than ought to be incurred for the good which may be expected to follow, you ought not to do the operation at all.

As to the amount of good which is to follow an operation, the surgeon alone can in most cases estimate it. In most cases, therefore, we must take the whole responsibility of operations, for it is only on our statements that patients can rely in judging whether they should submit or not; and most of them, even when they have our statements before them, are quite incapable of clearly and soundly judging. But there is a class of operations, in what I have called decorative surgery, in which we may justly put upon patients a much larger share of the responsibility than they ought to bear when the question is one of life or death. When people want, not to be cured of absolute deformity which hinders their success or comfort in life, but to have this or that done of which it does not matter whether it is done or not except for some personal vanity, let them understand that the operation is not altogether free from risk, and then let them take the whole responsibility of the matter.

Supposing, now, an operation to be decided on, there are some rules to be observed with regard to its performance which may be useful in averting calamities.

First, don't be too ready to operate in your own houses or in your own rooms. It is a thing too commonly done and always involves a risk which should not be incurred without need. Mr. Thomas Blizard, who was in his time one of the most distinguished surgeons in London, when he began practice in the City, was once consulted at his house by a merchant of great wealth and influence, who thought he would patronise the young man; for he knew his family. He called on Mr. Blizard one morning, showed him a cyst on his back, and asked him to remove it; and he removed it then and there. The merchant went away, caught cold, had erysipelas and died in ten days. I do not know what amount of unhappiness the case excited at the time; but I know that Mr. Blizard told it in after-life with the greatest regret; and that, as a measurable amount of part of the calamity to himself, his income fell 50 per cent. in that year and was not quickly recovered. It rose to a very large amount before he retired, but 50 per cent. for a year was part of the damage which he sustained by not observing the rule of not operating in your own rooms without a real need of doing so. You may do an operation there with all dexterity and care; but you do not know what the patient will do afterwards. Especially, let me advise you not to sound a patient for the first time, or to pass a catheter for the first time, in a man of questionable general health in your own room.

Again, do not operate upon even small inflamed parts. The mention of that last case of an encysted tumour reminds me of the frequency with which patients come to you for similar operations, to be done because the parts are giving them more trouble than they used. A man will bear a little tumour, or a small cyst, or a small pile, so long as it is not inflamed; but when it inflames it teases him, and he askes to have it removed with all speed. Don't do it. The risks of operating on an inflamed part are manifold, and much greater than the risks of operating upon one that is quiet. A man came to me in the out-patients' room, while I was assistant-surgeon, with a cyst on the front of his abdomen, acutely inflamed. I removed it at once. Three or four days afterwards he was admitted with inflammation of the cellular tissue and infiltration of putrid matter under the skin; and that was followed by phlebitis, and that by pyæmia, and that by death. The man was dead in three or four weeks after a very small operation for the removal of a cyst from the front of the abdomen. I operated on an inflamed part; I did wrong. If the man had been put at rest and the inflammation cured, the cyst might in all probability have been removed without risk.

You may sometimes see in my wards bad cases for which I am only indirectly responsible, 'surgery-cases' as they are commonly called, in which fingers are removed some days after being crushed; removed while they are still inflamed; and then the patients come into the hospital with inflamed hands; with cellulitis of the hand and of the fore-arm. I am bound to say that I have not seen any of them lately; but I have a clear recollection of several of them in former years; and of the long pain and illness and disability of the hand which were caused by the neglect of this rule of caution.

For another rule, always look carefully to the condition of the room or the house in which your patient is living; and set aside, so far as you possibly can, all the risks that may be thus incurred. Look to the sanitary arrangements about the man. One of the greatest annoyances that I have ever had was in the case of a gentleman whose prepuce I divided for phimosis. Severe it was, and necessary to be cured. I divided his prepuce and no more; neither put-in a suture, nor did anything that could disturb the healing of the wound. The cut was followed by sloughing of the integuments over two-thirds of the penis and very nearly the whole of the scrotum. After having done the operation, I found, on looking-about for what could have caused all this misery, that the patient, although living in a very good hotel, had a water-closet in his bedroom. I had looked round the room, not carelessly, before the operation, to see whether there was anything that could bring him into mischief, and all had appeared fair. But what I had taken to be a book-case, or some article of furniture of that kind, was a water-closet, which, with the nastiness with which some London hotel-keepers provide for the convenience of their customers, had been put into the bedroom. And this is not a very uncommon thing, even in the better class of lodging-houses and hotels in London.[1] Because every man, in coming to his rooms, likes to have for cleanliness his own water-closet, or at least to have one to every suite of rooms, the landlords put one at the side of a bedroom. Where a wardrobe should stand, they place a water-closet, and they front it, and make it look as like a decent piece of furniture as they can. It was through this scheme that the poor fellow lost the integument of his penis and scrotum. Look therefore,

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[1] The vile custom is becoming common in the private houses, even in the grandest of them, in London. I do not doubt that any surgeon carefully studying Mr. Teale's *Dangers to Health* may avert many miseries such as I have just described.

I repeat, very carefully to all the sanitary arrangements that can come within your power, even among the better class of houses and hotels.

Then there comes this rule;—never do an operation if you can cure the patient by any reasonable medical or other means. There are a considerable number of operations done for cases that should not be operated on at all; and these are amongst the very class in which the mortality of minor operation comes. An instance is in the case that I just spoke of—of phimosis. It frequently requires operation in children, especially if the orifice of the prepuce be very narrow; for this materially impairs the action of the bladder, the patient having to pass water against a continually too great obstacle. But both in children and in adults, many cases of phimosis can be cured without cutting. Very few prepuces, however long, should be divided or removed, unless their orifices are too narrow; they need only to be regularly drawn back and washed. And many that have narrow orifices can be gradually cured; by daily drawing the prepuce against the glans, thus widening its orifice, it may be fully distended without the need of an operation. Again in cases of varicocele: patients come to you, begging for cure; and nearly all of them are merely nervous, hypochondriacal, morbid-brained people, who are in fright about varicoceles, which they suppose to be the causes of impotence and wasting of the testicle. Now, no varicocele, to the best of my belief, ever did cause impotence or waste a testicle. But the operation for varicocele is not altogether free from danger. A most skilful operator for this disease reported, the other day, a case in which he himself operated and the patient very nearly lost his life. Once also I saw a young man with pyæmia following an operation for varicocele, which had been done very skilfully. Through this pyæmia he had acute suppurative inflammation of his right shoulder, his right knee, and his left hip ; and they were all spoiled, and he very nearly died. I doubt whether ninety-nine operations for varicocele would do good enough to balance one such calamity ; for of the ninety-nine operations the majority would have been quite unnecessary. Varicocele can, in a vast majority of cases, be perfectly well managed with a ring, or a truss, or suspensory bandage and cold water, and the operation may be wholly dispensed with : the more properly because varicocele is not a mischievous disease, and has nothing to do with the impotence or other sexual distresses that patients ascribe to it.

So also for urethral stricture. Among the operations that I have known fatal is catheterism, and that not very rarely. Don't be catheterising patients for supposed strictures till you have ascertained that they cannot be cured medically. Under the general name of stricture of the urethra are included several conditions which may be far better cured by medicine and diet than by any form of surgery ; mere transient or chronic swellings of the mucous membrane of the urethra. Catheterism is nothing but mischief to them.

Then, for another rule. If a disease can be cured by a bloodless operation as well as by one with cutting, choose the bloodless. This may be done in many more instances than you are apt to think. The sebaceous cysts of the scalp have, as I have said, a mortality of some two or three per cent., and the mortality in them is of peculiar distress, since at the outset, except for appearance, these cysts might be left. They are commonly removed when, being small, they are sources of but trivial trouble; and yet they have this rate of mortality. These may all be removed with caustic. I do not say that you never should remove by incision a sebaceous cyst from a patient's scalp; but you never need do so; and if the patient be one in whom the risk of an operation is in any degree greater than the average, you ought to remove the cyst with caustic.[1]

Ligature of hæmorrhoids, again, is an operation sometimes fatal. Sir Benjamin Brodie told me that he had lost three patients from it. That might be a very small proportion of the number of patients he operated on; but he never ceased to speak of it with great regret. I have not lost a patient by the operation, but I have had two in whom it was followed by pyæmial abscess and serious risk of life. Doubtless the ligature of hæmorrhoids may be performed in the vast majority of healthy persons with complete impunity; and doubtless in many it is the best operation for the cure of the disease, and should be performed. But in many cases, the cauterising of hæmorrhoids with nitric acid or the actual cautery is quite as successful as the ligature ; and therefore you should not tie piles in any person who would incur even the least more than the ordinary risk from the operation unless you are sure that cauterising will not cure them.

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[1] The best method, I think, is to paint the skin over the cyst with the strongest nitric acid; to paint it thoroughly, in and in, as with iodine. After this small cysts may be left, and the skin and they will shrink and be cast-off like scabs. Large ones, when they begin to separate from the subcutaneous tissue, may be pulled out; and the cavities they leave will heal with any simple dressing.

The sebaceous, or atheromatous, cysts on nearly all parts except the scalp may almost always be cured by emptying them. In nearly every case a minute natural way into the cyst may be found, either open, or closed by some dark dry substance easily removed. If the opening be quickly dilated with probes of increasing size, the contents of the cyst may be squeezed out, and shrivelling of the cyst will usually follow.

Another class of cases in which I remember some calamities is that of the little cancerous warts and ulcers that occur about the face. These may be commonly removed in healthy persons without risk, but in the unhealthy, the feeble and the decrepit, they cannot. They may be removed as well with caustic as with the knife. The caustic is as complete in its action and, with due care and experience in its use, can be employed just as readily and quickly as the knife. Use it, therefore, as a general rule, for which however I give no more special instances than these, that where the risk of a cutting operation would be appreciable, and you can substitute for it the use of caustic or anything that shall not be cutting, you should do so.

Another rule: Be quite clear about carrying-out carefully the last stages of all operations. I suspect that everybody in operating, when he has passed through the sort of mental tension in which he performs the most difficult part of what he has to do, when his attention has been completely occupied in some difficult task to be achieved, next feels his mind relaxed, his attention less keen, less ready for exercise than it was before. Be sure that these are times of danger to your patient. As soon as the attention ceases to be as keen as possible, you are in risk of doing some mischief. That strip of plaster that was put round the man's thigh was an instance of this. I had got through an operation of considerable difficulty, and the whole trouble seemed to be at an end: I was less on my guard than I was before; and I overlooked that strip of plaster, which, had it come in the middle of the operation, I should assuredly have at once seen and corrected.

I have heard of a case in which a sponge was left in an abdominal cavity after ovariotomy; and of another in which a broken-off blade of a pair of bone-forceps was left deep in a wound made for the removal of dead bone; but a worse result than in either of these followed an oversight in a case of my own. A man's nostrils had to be plugged after an operation for the removal of a fibrous polypus from his nose; an operation of much difficulty, and much doubt in its course as to what next should be done. I had completed all that seemed most difficult and important; and then came the condition of relaxed, comparatively inattentive mind; and one of my colleagues who assisted me put a plug into the posterior nares. Through inattention the plug was made without a string attached to it with which to draw it out again. I noticed it directly afterwards, but the thing was done, and it was said that it was not worth disturbing the patient again to alter it. But the patient died of that plug, for it could not be taken out of his nostrils, except by thrusting it from before; and thrusting it in front brought on another hæmorrhage and that hæmorrhage brought on delirium, and the delirium exhaustion; and so through the lack of a piece of string in the right place the man died. It was omitted only because at the conclusion of the operation our minds were less intent than at the beginning, less watchful. All the danger seemed past just when still greater danger was at hand.

One more rule I will give you. Look very carefully to your apparatus. I have no doubt that you will look very carefully to the edges of your knives and your saws and all things that are mighty to handle; but look to the plaster, look to the ligatures and the sutures, and all the things which are commonly called minor. When I have seen Sir William Fergusson and Mr. Spencer Wells operate, I have never known which to admire most; the complete knowledge of the thing to be done, the skill of hand, or the exceeding care with which all the apparatus is adjusted and prepared beforehand. The most perfect plaster, the most perfect silk, not one trivial thing left short of the most complete perfection it is capable of. I have no doubt that the final success of their operations has been due just as much to these smaller things, as to those greater things of which they are masters. In contrast with their work, I have seen operations performed with great skill; and a piece of bad plaster or bad silk, or something left at home, has put the patient's life in danger. Not long ago, I remember, a patient had secondary hæmorrhage after an operation, and the reason was that the sticking-plaster was bad. One of the things that was to control the hæmorrhage was pressure by plaster; the plaster slipped; and the patient ultimately died of hæmorrhage. Many an operation has been spoiled by bad silk, or bad needles, or bad something that was thought too trivial for care. Surgery could supply only too many illustrations of the wise proverb against those that despise small things.

These are a large number of rules for you to observe; and yet there is no one of those which I have laid down which is not necessary, I will not say for ordinary success in surgery, but for the avoidance of great calamities. Nay, there are more rules than these, which you will soon learn for yourselves: and now, if, after taking all these cares, you still meet with calamities, you may meet them with an honest consciousness that you are really able to say, what people are too ready to say in a mere useless pretence, that you did your best. One continually hears it said, 'I did my best; but these things will happen;' and yet what a man has called 'doing his best' was not doing so well as he had done before, or so well as he will do next time. Let me warn you against this. The intense dissatisfaction that follows these failures makes one very ready to adopt any excuse that can be given. Men constantly say, 'These things have happened to better men: they have happened to this or that person of distinction; so I need not be surprised at having them.' There is no more miserable or false plea than this. Why, if you know that another man has fallen into a fault, the blame for your falling into the same ought to be much greater, not less. If any man had run into a pit unawares, and you, having heard of it, had run into the very same pit, it would not exculpate you to say that a better man than yourself had run into it; surely the blame to you would be the greater. But there are some people who seem to have a happy art of forgetting all their failures, and remembering nothing but their successes, and, as I have watched such men in professional life, years have always made them worse instead of better surgeons. They seem to have a faculty of reckoning all failures as little and all successes as big; they make their brains like sieves, and they run all the little things through, and retain all the big ones which they suppose to be their successes; and a very mischievous heap of rubbish it is that they retain.

There is but one thing that I am afraid of in telling you the risks and dangers that I have met with; and that is, that you may over-estimate the probabilities of them, and be afraid of the responsibility which you must undertake. Well, after all, this incurring of responsibilities is decided rather by temper than by knowledge. There are some people who are ready for anything; some that under difficulties shirk all they can. But of this I am quite sure, and you will see it proved not only in surgery but in every calling, the men who are most ready to take responsibilities, and to bear them lightly, are those who can best estimate beforehand what are the risks and the difficulties they incur; the men who, knowing what is to come, can therefore face it most bravely and with most success.

Therefore study fairly and fully, beforehand, all the things that may occur to you in an operation and after it; make yourselves, as far as you can, masters of each case, and generally masters of your whole profession; and then you will neither be afraid of your responsibilities nor ashamed of your failures.

The risks and calamities of operations have been greatly reduced even during the ten or eleven years since the foregoing lectures were given, but they still are too many and too great, and I venture to hope that these lectures may help in still further reducing them.

When I recollect the improvements in surgical practice of which I have been a witness, none seem to me more gratifying than those which have not only diminished the mortality after operations, but have diminished the fever and all the other troubles apt to follow them. No one, I presume, would venture to assign to each improvement its share in the diminution. Doubtless, the highest share must be assigned to Mr. Lister's practice and promulgation of his antiseptic treatment; but Mr. De Morgan's use of the chloride of zinc; silver-sutures, acupressure, torsion, catgut-ligatures, Esmarch's elastic bandage, a steadier belief that the healing of wounds is a natural process that needs only to be undisturbed; all these have been means of saving life; and with them may be counted the constantly increasing care for healthy arrangements in hospitals and houses, and for cleanliness and simplicity, and, among the very greatest of all improvements, the greater intelligence, care, and skill of nurses. But I believe that another thing has been more potent than any one of these, namely, the increase of the care in watching all patients submitted to operations, and in rejecting the unfit. Some surgeons always took such care and had great success; but of late years, especially since Mr. Lister's plans have been well known, there has been an admirable rivalry for success; treatment after operations has become the most interesting subject of surgical study; and everyone proposing or adopting an improvement has watched personally and closely the patients submitted to its use. The result is, I believe, that the total mortality and all the illnesses after operations of all kinds are not more than a third as great as they were thirty years ago. But study and care will make them still less, if no part of the study be deemed trivial, and no portion of the care so easy that it may safely be left to others than the operator.[1]

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[1] See Note IX.

ON STAMMERING WITH OTHER ORGANS THAN THOSE OF SPEECH.

THE characters of stammering in speech are so well known, and may be so often studied, that we may take this form of disease as a type of a class including similar affections of other organs than those of speech, and may apply to all the same generic name of 'stammering.'

Stammering, in whatever organs, appears due to a want of concord between certain muscles that must contract for the expulsion of something, and others that must at the same time relax to permit the thing to be expelled. Ordinary stammerers cannot at the same time regulate the contraction of the muscles of expiration for the proper expulsion of air, and the relaxation of those of the glottis, or (in different cases) of the tongue or lips, for permitting the expulsion of the air while it is being made vocal and articulate. Numerous as are the varieties and modes of speech-stammering, this discord of muscles is in them all. Its dependence on the nervous system and the mind is in fact plain enough, in theory very difficult. Perhaps it may help the study of speech-stammering, if similar disorders be watched in other parts of the body; but at present I want only to point out the facts for their importance in our practice.

Stammering urinary organs are not rare; and they may be known by observing, sometimes in the same person, the exact parallelism between the difficulty of expelling urine and that of expelling the air in the ordinary speech-stammering. The patient can often pass his urine without any trouble, especially at customary times and places; and, when he does so, the stream is full and strong, and he has 'nothing the matter with him.' But he is in trouble if anyone is looking at him, or if he is hurried, as at a railway station. At other times he suffers all the distress that he might have with a very bad urethral stricture. He cannot pass a drop of urine; or, after a few drops, there comes a painful check, and the more he strains, the less he passes; and then complete retention may ensue and over-filling of the bladder. In these characters, the case may closely resemble one of the ordinary instances of so-called congestive stricture, in which rapid swelling of some part of the mucous membrane narrows or closes the part of the canal which is least capable of distension. But the circumstances in which the difficulty arises are, in the two cases, very different. The stammering with the bladder occurs in just the same conditions as the stammering speech. There are few stammerers in speech so bad but that they can talk or read fluently when they are alone or with those whom they are most familiar with, or when they are entirely thoughtless as to their manner of speaking. Their worst times are when with strangers, or with persons or in places that are associated in their minds with stammering. It is just so with the bladder and urethra. One patient told me that, although he could usually pass urine well, yet there was one person with whom nothing could induce him to walk, because once, when he was with her, he wanted to pass urine, retired, and failed. His experience of the effects of association of thoughts made him sure that, if he were again in the same circumstances, the same distress would come on him more intensely. Another, a clergyman, always passed a catheter before going into his pulpit. He had often had nervous troubles with his bladder; and once or more, having felt a horrid need of passing urine while he was preaching, he found himself, at the end of his sermon, unable to pass any. He said he felt sure that, if he were to go into his pulpit without the assurance of an empty bladder which his catheter (a No. 12, passed easily) gave him, he should be pressed with the desire to pass urine, and then should have retention. As a speech-stammerer might be unable to utter a word, so would he be unable to pass a drop of urine. Again, another patient has described himself as driven to all kinds of devices to bring about the association of ideas or of actions with which he best succeeds in emptying his bladder. He must walk up and down his room, and stand or sit in some customary singular posture, and then be very careful not to direct his mind either too much or too little to what he has to do, and then to let the urine run as inconsiderately as he can.

I might add many more notes of the seeming caprices of the stammering bladder and urethra; but it may suffice to say that nearly all the phenomena of stammering speech find in them their parallel. In both, alike, there is usually a history of the difficulty having been felt even in early life; in both alike are observed the strong influences of habit and of association of ideas; the effects of transient changes in the vigour of the nervous system; the need of a justly and yet almost unconsciously measured exercise of the will, that it should be neither more nor less than enough; and the influence of distraction of mind. And equally in both classes of patients may be noticed the coincident general sensitiveness of the nervous system, and the family-relationship with persons who suffer various other forms of nervous disorder.

One or two differences may, however, be noticed between the urinary and the speaking organs, in their respective stammerings. The former cause more pain. The bladder, unable to expel its contents, becomes for a time the seat of the feelings of distress, tightness and urgent need of emptying, which are felt in more simply mechanical retention of urine; and it becomes more sensitive and more irritable, but probably rather through the constant and earnest attention of the mind than through any change in its own condition. In cases of long-continued urinary stammering, some of which began in very early life, and some of which I have known for many years, I have seen no indication of any supervening organic disease. After years of trouble, nothing appears wrong but the manner of action of the parts. But though, so far as I have yet seen, stammering does not produce structural disease of the urinary organs, yet, in many of their structural diseases, the urinary organs become very 'nervous'—that is, very sensitive and disorderly in their nervous systems; and, in this state, they imitate some of the faults of stammering. Thus in stricture, especially from congestion of the mucous membrane of the urethra, patients feel that a great part of the difficulty of passing urine is due to their inability to regulate and harmonise the urinary muscular acts. As a man said to me, 'If I could stop the straining, I could do it; but, as soon as ever I strain, the spasm comes-on.' By this he meant that he could not duly moderate the action of the expelling muscles; and that, as soon as these began to act too vehemently, those that close the urethra would act in spite of him. Just so a stammerer sticks fast in speech; and the faster, the more he strains. In similar likeness to stammerers, we may see that most patients with long standing obstruction from stricture or diseased prostate, or whatsoever else, resort to habits or postures, or mere tricks, by which they may gain the advantage of association of ideas for aiding the successful use of their muscular power. Even without more disease of the urinary organs than the increased frequency of action of the bladder which usually comes with advanced years, nervous and sensitive men let themselves fall into many troubles and need to be taught how to teach their bladders the habits of regular and quiet action.

The treatment of stammering urinary organs has difficulties similar and equal to those of treating stammering speech. The patient must try to educate himself to a calm control of his muscular power; and, on any occasion of failure, must get what help he can from such mental tricks as I have referred to. He should evade all risks of difficulty and all the conditions in which he has suffered his worst failures. He should do anything rather than fail to pass his urine. He should not always yield to the first impulse to pass it, but should try to regulate the actions of the bladder to certain fixed hours of the day. And especially he should learn to use a catheter, not only that he may thus relieve himself in case of absolute need, but that he may be free from the enervating dread of helpless retention. He should keep his whole economy, and chiefly the secretion of urine, in the healthiest state he can; for, like all other stammering, or in even a greater degree than any other, that of the urinary organs is influenced by the condition of the general health.

The characters of stammering with the organs of deglutition may generally be recognised by their likeness to those of urinary stammering. They have to be distinguished not only from the mechanical obstructions of the upper part of the œsophagus, whether from stricture, pouch, or other hindrance, but also from the difficulties of swallowing that depend upon paralysis, whether hysterical (so called) or senile or from progressive muscular atrophy. It is not necessary that I should try to point-out the diagnosis of stammering in deglutition from each of these diseases. The common ground of diagnosis from them all is in the predominant influence of mental association in the stammering, and its slight if any, influence in any of the other difficulties. Sometimes swallowing is easy and unhindered; at others very difficult, especially in company, or when the trouble is particularly inconvenient, or the mind too much set on it. Hence, some of the patients always dine alone, finding it easy to swallow when they know that they cannot be seen. Briefly; nearly all that has been said of stammering with the urinary muscles might be repeated, *mutatis mutandis*, of that with the muscles of deglutition, and both may be studied by their likeness to the ordinary speech-stammering, with which, indeed, they may be associated in the same person or in the same family. A man of forty with well-marked stammering in swallowing told me that he had stammered in speech during all his earlier life, but he now spoke smoothly.

I have not seen cases enough to be able to discriminate between the stammering and the spasmodic stricture of the œsophagus. I think they are different affections, but I need more opportunities of studying them. If any one will investigate them, much help may be gained from the paper by the late Dr. Brinton in the 'Lancet' for January 6, 1866, and from the remarkable case of fatal spasmodic (or stammering?) obstruction of the œsophagus recorded by Mr. Henry Power.[1]

I believe that a disorder essentially similar to stammering may be traced among the cases of difficulty of defæcation not due to organic disease; but it requires more study than I have yet been able to devote to it.[2]

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[1] *Lancet*, 1866, vol. i. p. 252.

[2] I have lately seen John J——, aged 3½, the child of very nervous and excitable parents. He has been slow in learning to speak, and now stammers, sometimes a little, but occasionally very badly. Sometimes he passes large evacuations without pain or difficulty; but often, particularly, his father told me, when his speech-stammering is troublesome, he spends from half an hour to an hour in futile attempts at defæcation. On these occasions he becomes very excited, running about the room, and from one person to another, apparently in considerable pain, passing his urine at frequent intervals, complaining that he cannot relieve himself, and asking that some one should rub his stomach. If he is soothed and humoured, he becomes quiet, and at length his bowels act. Enemata and large doses of purgatives had failed to remove his trouble, and frequently there is no action for three or four days. I carefully examined the anus and rectum, and could detect neither narrowing, valvular obstruction, nor anything else that felt unnatural in either.—[Ed.]

CASES THAT BONE-SETTERS CURE.

After systematic lectures on the chief injuries of the bones and joints, it may be useful if I try to enforce by particular illustrations some of the general principles that I stated; and it may secure your attention if I use the form of speaking of the Cases that Bone-Setters cure. For few of you are likely to practise without having a bone-setter for a rival; and, if he can cure a case which you have failed to cure, his fortune may be made and yours marred.

I believe that, in the large majority of cases, bone-setters treat injuries of joints, of whatever kind, with wrenching and other movements of them. The proceeding was described to me lately by a gentleman who had a well-marked fracture at the lower end of his radius. He had been to a distinguished bone-setter, who, with a glance at the wrist, said,: 'You ha' put out your wrist. that's what you ha' done;' then violently stretched and moved the joint; then said; 'Now you go and hold that under my pump,' and, after the cold douche, took his fee. The fracture, being none the better for this treatment, was, at a second visit a few days later, again wrenched, pumped upon, and paid for. But, this time, much pain and swelling followed; and the patient had the wisdom to call himself a fool, and to go to his usual medical attendant; who sent him to me.

Cases of this kind are of frequent occurrence. To the bone-setter, every injured joint is 'put out;' and the one method of cure is the wrench and the rough movements, by which it is said that the joint is 'put in' again.

Now, it would be of little use to us to estimate, even if it were possible, the quantity of mischief done by treatment such as this. It is more important to know and consider that it sometimes does good; that, by the practice of it, bone-setters live and are held in repute; and that their repute is, for the most part, founded on their occasionally curing a case which some good surgeon has failed to cure. For here, as in all similar affairs, one success brings more renown than a hundred failures or mischiefs bring disgrace. The patients who are cured never cease to boast of their wisdom in acting contrary to authorised advice. They who are damaged are ashamed of themselves and hold their tongues.

What, then, are the cases that bone-setters cure with their practice of wrenching?

First, of course, they have a certain number of real fractures and dislocations which they reduce, and of old ankyloses which they loosen. Of these, I need say nothing; for I believe there is nothing in their practice in these cases which is not as well or better done by regular surgical rules.

Next, there is a rare accident which a wrench may cure, and which, if you are not on your guard, you may fail to make out; namely, the slipping of a tendon. I have known the tendon of a peroneal muscle[1] slip to the front of the outer malleolus; and a tendon slip with great pain at the radial side of the lower end of the ulna; and in three instances I have known the extensor tendon of the middle finger slip over the heads of the metacarpal bone and first phalanx; and here, from our museum, is the long tendon of a biceps[2] slipped from its groove. Of these accidents, the first two may be made-out by feeling the displaced tendon and the gap where it should be; the third may be at least guessed-at by the signs which Mr. Soden has pointed out in his case, related in the *Medico-Chirurgical Transactions*;[3] the slight forward prominence of the head of the humerus, its drawing up under the acromion, and the pain at the lower end of the biceps on stretching it. As to this displacement, however, I doubt whether it would be ever so certainly made-out as to be fairly reduced;[4] the others, at the ankle and the finger, should be remedied by relaxing the slipped tendon as extremely as possible, and replacing it with lateral pressure and sudden stretching.

Some other tendons may slip, I believe, like these; the tendon of the popliteus appears very likely to do so; and I can hardly doubt that a bone-setter has occasionally done, unwittingly, a lucky trick, when, with wrenchings and twistings of a joint, he has made some dislodged tendon slip back to its place.

But there is a set of cases much more common than these, which may be cured with wrenching and rough movements; namely, the so-called internal derangements of joints. The knee-joint[1] is by far the most frequent seat of this injury, whatever it is; but the like occurs in the lower jaw-joint; and I have known very similar signs of injury at the hip and elbow. The most marked sign is that, while the joint is being moved in some ordinary action, most often when the foot rests firmly on the ground, and the thigh is rotated outwards on the leg, something is felt slipping or suddenly caught between the bones, and a great pain comes and the joint is locked. It will move in one direction, not in the opposite one: just like a hinge with a stone in it (as a patient described it to me). The locking of the joint, which is, usually, at moderate flexion, is soon followed by effusion of fluid into it, and other signs of more or less acute inflammation of the synovial membrane; and, if nothing be done, these last for some days, or even for some weeks, before, with subsidence of the inflammation, the joint gradually regains mobility.

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[1] See Note XI.

[2] Ser. v. 0. See Note XII.

[3] Vol. xxiv. p. 212 et seq.

[4] See Note XIII.

Many of these symptoms are like those due to a loose piece of cartilage in a joint—a much rarer condition. But, with loose cartilages, joints are not, I think, often locked for any length of time; they are stopped with extreme pain when the cartilage gets between the bones, but it soon escapes and they go again. In some of the cases of what I am calling locked joint, at the knee or lower jaw, it is probable that one of the interarticular cartilages slips and is nipped between the bones. We have, in the museum, a cast[2] from a knee in which it is certain that this happened. But in some cases it seems more likely that a fold of synovial membrane, or a portion of capsule, or of synovial fringe, is caught and nipped. However we may explain the accident, it is one of those that may be cured by the bone-setters. Such movements as theirs are not always necessary; and none should be practised recklessly or without plan; but force may be requisite and, if used knowingly, will certainly set a locked joint right again.

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[1] See Note XIV.

[2] See Note XV.

Sometimes a patient learns for himself how to unlock his joint, and can do it gently, first, in the case of the knee, bending and then with slight rotation slowly stretching it. But he may need more force than he can use for himself; and you may apply it better than a bone-setter can.

In the case of the knee, the 'lock' usually takes place with the joint moderately bent and the leg rotated outwards. You must unlock it by extremely bending the joint, then rotating the leg inwards, and then suddenly and forcibly extending it. In the same manner, for any other joint that appears to slip and lock, you must observe the direction in which the patient can easily move it, and the direction in which movement is impossible or very painful; then you must move it, first, extremely in the former direction, and, secondly, forcibly in the latter. The manœuvre is sometimes very painful; and the force required for success may be greatly augmented by muscular resistance. In either case, the use of ether or chloroform may ease both the patient and yourself.

A fourth set of cases that may be cured with wrenching, or other forcible movements, includes those in which injured joints are held stiff, or nearly stiff, by involuntary muscular action. You may meet with such cases in patients of any age; but they are most frequent among the young. Sometimes after well-treated fracture near a joint; sometimes after a sprain; sometimes when a joint has been hit hard—stiffness remains, which is due solely to muscular action; and this stiffness in some cases is constant, and in others ensues on slight attempts at motion.

Any joint, I believe, may be in this condition at any time after an injury. I have seen it at the elbow, shoulder, cervical spine, hip, knee, and ankle; in some instances a few hours after the injury, in some, several weeks. You may know this muscular kind of stiff joint by this, among other signs: that the stiffness is not a dead block, as if by meeting of displaced bones, nor has rigid resistance, but yields a little, as if with the 'giving' of a firm elastic substance which instantly recoils. Besides, you may generally feel the muscles in action; not hard and vibrating as if with all their force, but firm, steady, and resisting. If, however, you have any doubt about the diagnosis, ether or chloroform will settle it. As soon as the patient becomes quite insensible, the muscles relax, and the previously stiff joint becomes freely moveable.

Herein appears the best mode of cure. When the patient is insensible, move the joint quietly, and then confine it with splints in a posture opposed to that in which it was stiff. After a day or two, it may be moderately exercised, douched, and shampooed; but in the intervals of this treatment the joint should be confined with the splints, if it should appear to be becoming stiff again.

You may sometimes see another condition, very like this involuntary muscular rigidity of joints, in young children. If one of its limbs be hurt, a young child will sometimes hold the limb steadily in one position, and complain if it be moved. Thus, a child, whose thigh has been strained, will stand on the other leg, and keep the hurt thigh lifted up, as if for extreme disease of the hip-joint; or, for similar hurts, will, for even many days, keep its arm close to its side, or its elbow-joint steadily bent.

Perhaps, some of these cases are the same as those I last spoke of; but in many of them the muscular fixing of the part has seemed to me not involuntary. It is more like a trick, or an instinct of fright lest the part should be hurt again. Certainly, the muscles relax instantly in sleep, and not unfrequently when the attention is distracted from them.

I suppose that bone-setters would cure this state with their panaceal pulling; but, happily, they are allowed to have but little practice among children. Happily, I say, for children's joints are much more imperilled by violence than those of older patients; and you cannot be too cautious in concluding, when a child holds a joint fixed, that there is really no disease or serious injury.[1] All the evidence must be negative; and an oversight may be disastrous.

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[1] The condition here described is sometimes imitated when infantile paralysis begins with great pain in the paralysed part, or with its being very painful when moved; but I think that the diagnosis may in these cases be made by observing that the muscles of the limb which is paralysed, or is becoming so, do not resist extension.

However, you need not use any kind of force in this kind of contraction in a child. If the part be only allowed a few days' rest, it will get well; unless, indeed, it be seriously damaged—in which case, you will have done well by avoiding all violence.

In another set of cases there is no doubt of the voluntary character of the muscular rigidity of a joint. You saw lately a girl in Lawrence Ward who wilfully resisted all movements of a hip that had been only slightly hurt. If a bone-setter had wrenched her joint it might have served her right, and the pain might have cured her temper. But she recovered just as well when she saw that she did not deceive us and was not pitied. You may expect to find cases of joints wilfully held stiff among the worser sort of school-boys, and they sham pain as well as stiffness. It is lucky for them when they can escape punishment or disgrace by lying and letting the bone-setter be believed, when he professes that he has 'put-in' their dislocations.

Now, among all these cases of muscular difficulty, there is a good harvest for bone-setters; and, without doubt, their remedy, rough as it is, is often real. Yours may be as real, with much less violence; and, with better diagnosis than they can ever make, you may do none of the harm that they often do.

But there is a yet larger class of cases which bone-setters sometimes succeed in curing very quickly; namely, ordinary sprains.

I cannot doubt that some recently sprained joints may be quickly cured, freed from pain, and restored to useful power, by gradually increased violence of rubbing and moving. This method of treatment has many times been introduced into regular surgery; but it has never been generally adopted, or, I think, long practised by anyone. I suspect that it sometimes does no good, and sometimes does harm enough to disgust a prudent surgeon.

I believe that the best mode of applying this plan of treatment is, to begin by handling, rubbing, and pressing the sprained part and its neighbouring structures very gently. After doing this for fifteen or twenty minutes, the rubbing and pressing may be increased in hardness, and the joint may be more freely moved, especially in the direction opposite to that in which it was forced by the accident. Another quarter of an hour or more thus spent is to be followed by rougher proceedings of the same kind, till even severe pressure and wide and violent movements can be borne without pain; and then, in an hour or so, the cure is deemed complete, or so nearly complete as to require only a slighter treatment of the same kind on the next day.

I cannot tell you in what kind or proportion of recent sprains you may employ this treatment; indeed, I cannot advise you to use it at all, unless by way of trial in very healthy men. For I do not doubt that it will sometimes do harm; and the greater quickness of cure which it may achieve is not worth a risk, while we can always employ such safe, and not slow, means as the combined rest and support of the sprained parts which are given by strapping or the starched or plaster-of-Paris bandage. In short, this rough-rubbing and hard-pulling treatment of recent sprains seems to me one of those dangerous remedies which, though I believe in their occasional utility, I would rather not employ till I can discriminate the cases in which they will do good from those in which they will do harm.

Such discrimination, difficult as it may be among recent sprains, is not very difficult among old ones; that is, among cases in which the ill effects of sprains remain long uncured. It is among these cases that bone-setters, and especially those who combine rubbing and shampooing with their 'setting,' gain their chief repute, and not without some right.

Among 'old sprains,' you will find a strange variety of cases—chronically inflamed joints, each probably bearing the marks of the constitutional disease or unsoundness of its possessor, and loose joints, and slipping, and creaking, and weak, and irritable joints, and many more. To all these, mere bone-setting does harm, or no good; and rubbing and shampooing are of little, if any, use; indeed, to a really inflamed joint they would generally be mischievous. But among 'old sprains' are not a few cases in which a joint, after long treatment, remains or becomes habitually cold. It is generally stiffish and weak, sensitive, aching after movement, or in the evening or at night, sometimes swollen, puffy or œdematous, but not with an 'œdema calidum.' Whatever else it is, it is cold, or, at the most, not warmer than the healthy fellow-joint. Among these cold joints, bone-setters and rubbers gain, as I said, great repute; and all the more because they often get the cases after the patients have become tired and discontented with a rather over-careful surgery. Admirable as is the rule of treating injured joints with rest, such rest may be too long continued; and in every case in which it has done full good, it must, in due time, be left off. With rest too long maintained, a joint becomes or remains stiff and weak and over-sensitive, even though there be no morbid process in it; and this mischief is increased if the joint have been too long bandaged, and still more if it have been treated with the cold douche.

I need hardly say that it may be sometimes difficult to decide the time at which rest, after having been highly beneficial, may become injurious; or that the decision is always a matter of grave importance. On the one hand, you and the patient may be losing time through over-caution; on the other, the risk may be incurred, through rashness, of renewing inflammation in a damaged joint. I believe you will be safe, if you will take the temperature of the part for your guidance. If the part be always over-warm, keep it quiet; if it be generally cold, or cool, it needs and will bear exercise and freedom from restraint of bandages, with friction and passive movements and other similar treatment of the reviving kind. And of this you may be the more sure when the cold integuments over the joint are dusky-pink or purplish, or become so when the limb hangs down, and when there is little swelling, and when pain is much greater than is accounted for by any appearance of disease.

I do not know whether bone-setters make any discrimination among these cases; and I do not advise you to adopt their rough method in all or in most cases; for though they may, when successful, prove emphatically the utility of movements for old sprains, yet the same good may be more safely done with gentler means of the same kind. Exercise of the hurt part should be gradually increased and always followed by long repose; and the frictions and shampooings should be gradually made harder and more rough, and the passive movements gradually extended. Always, the part, if itself cold, should be, by any means except bandages, kept warm; and always the patient's constitutional defects should be watched and, if possible, amended; for very commonly the chief hindrance to the recovery of a sprain is not local, but some general wrong—gout, chronic rheumatism, or struma, or hysteria, as it is called.

An 'hysterical joint' is, indeed, sometimes a rare opportunity for a victory for a bone-setter. Cold, weak, useless for want of power of will, intensely sensitive, subject to all the seeming caprices of a disorderly spinal cord and too vivid brain,—such a joint as this may be cured by the sheer audacity with which it is pulled-about. If nothing in it but its portion of the nervous system is in fault, this may be sometimes cured through influence on the mind. And so not only bone-setters, but the workers with Mesmerism, and tractors, and oils, and distant or superficial electricity, can sometimes cure hysterical joints: for the patients love to be cured with a wonder; and the audacious confidence of all these conjurors is truly wonderful.

From all this, you may see that the cases that bone-setters may cure are not few. I think it very probable that those in which they do harm are numerous; but the lessons which you may learn from their practice are plain and useful.

Many more cases of injured joints than are commonly supposed to be thus curable may be successfully treated with rough movements—wrenching, pulling, and twisting. The cases that are thus curable I have endeavoured to point out to you. Be on the watch for them. But remember always that what may be treated violently may be treated more safely and as successfully with comparative gentleness; and that, in some cases, you may very advantageously use chloroform or ether. And remember, also, that no degree of violence, not even such movements or exercises as I have advised, can be generally safe in the treatment of injured joints, unless when directed with a skilful discernment of the appropriate cases.

Learn then to imitate what is good and avoid what is bad in the practice of bone-setters; and, if you would still further observe the rule, *Fas est ab hoste doceri*, which is in no calling wiser than in ours, learn next what you can from the practice of rubbers and plasterers: for these also know many clever tricks; and, if they had but educated brains to guide their strong and pliant hands, they might be most skilful curers of bad joints and of many other hindrances of locomotion.

Since the publication of this lecture, a valuable essay on bone-setting has been published by Dr. Wharton Hood,[1] who has thoroughly learned the art, and practises it skilfully. He fully describes the several methods of manipulation, and no one can doubt their value when used prudently.

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[1] 'On Bone-Setting,' 1871.

My later experience, as well as Dr. Hood's essay, makes me believe that my account of the 'cases that bone-setters cure' is not very faulty. I have made some corrections in it and have some things to add.

Chiefly, I would add emphasis to what I have said of the mischief of keeping injured joints too long at rest or too cold. Too long rest is, I believe, by far the most frequent cause of delayed recovery after injuries of joints in nearly all persons who are not of scrofulous constitution. In the healthy, the chronic-rheumatic, and the gouty, it is alike mischievous; and not only to injured joints, but to those that are kept at rest because parts near them have been injured. Mere long rest stiffens them, and makes them over-sensitive; cold douches and elastic restraints and pressures make them worse, and nothing remedies them but movements, whether forced or voluntary. The same may be said of joints which have been kept too long at rest for inflammations of whatever kind, still excepting the scrofulous, which should rarely be treated roughly, and never without much caution.

Dr. Hood's essay should be read on all these cases, not only for the manual treatment which he teaches, but for the signs which he indicates as decisive in the choice of cases. He believes that the success of 'bone-setting' in them is due to the rupture of adhesions; and this may be. I have seen such adhesions in the ankle-joints of legs amputated after being long at rest, though the joints had not been evidently inflamed; and Mr. Butlin[1] has related a case of ankylosis of a knee-joint in a limb which was long kept straight for the treatment of a fractured femur. But even without adhesions a joint long at rest may become restrained in certain movements by the gradual shortening of all those parts of its ligamentous structures which have been constantly relaxed, and it is likely to be very painful when a strain is put upon these shortened structures to restore them to their natural length.

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[1] 'Trans. Pathol. Soc.,' vol. xxv. p. 212.

Among the most frequent instances of painful stiffnesses induced by long rest of unhurt joints, are those of the fingers after fractures of the fore-arm, and especially after fractures of the lower end of the radius. And this gives me occasion to say that, of the many inventions for treating this fracture, all are bad which hinder the easy movement of the phalanges of the thumb and fingers.

Another set of instances are those of the tarsus, which, though itself unhurt, may remain stiff and painful after diseases and injuries for which the leg has been long kept at rest. These are not met with, I believe, when the foot has been kept at a right angle with the leg, as in every such injury it should be. In this posture it will bear, without strain or pain, the weight of the body when walking is resumed.

Other similar groups of cases might be cited; but they would all come under the general descriptions of joints becoming stiff and painful, or unable to bear the strain of ordinary movements, through being kept too long at rest. And if I should be asked how soon an injured joint may be safely moved or allowed to bear weight, I should say, generally, as soon as it is cool during any considerable part of the day, and not at every part tender on pressure, and not painful when its articular surfaces are pressed together. But particular judgments may have to be formed in the cases of the scrofulous, the 'hysterical,' and the gouty; in the first, rest is seldom too long; in the second, seldom too short; in the third, the general health must be considered.

As to the methods of moving the joints thus stiffened and painful, it is sufficient, in a very large proportion of cases, if the patient will resolutely use them; bearing some pain and not fearing it as if it were a sign of disease either present or impending. In the worse cases, violent movements must be used; and I believe the best will be such as Dr. Hood describes. Ether or chloroform may be used, and will sometimes save violence by finding that much of the rigidity is only muscular. But I must add that in all but the slightest cases, or the 'only nervous,' the forced movements are only the beginnings of cures. The popular belief, that the cure by bone-setting is complete at once, is erroneous; a good start is obtained with great *éclat*; but voluntary resolute exercises, or repeated forced movements, are necessary to maintain or increase the advantage first gained.

I have not mentioned in the lecture a set of cases which are said to be sometimes cured by bone-setters, and in which, after strains or other injuries of the spine, stiffness and aching long remain, and especially pain or tenderness over one spot at which, the patients sometimes tell, a crack or a slip was felt at the time of injury. I have seen several of these cases, chiefly in nervous and over-sensitive women and girls: bone-setting, I have heard, has cured some; in more, I know that it has failed;

and these have slowly recovered without any evident influence of treatment.

On these and, indeed, on all the cases of which I have been speaking, I recommend the study of Dr. Hood's essay. It may enable any surgeon to do what I advised; 'to imitate what is good, and avoid what is bad in the practice of bone-setters.'

ON STRANGULATED HERNIA.

LECTURE I.

I PROPOSE to give you some lectures on Strangulated Hernia, a subject of great interest in practice, and one which you should do your best to learn while here; for it is only in a large hospital that you can see many cases of hernia, and only by the study of many cases that you can prepare yourselves for the great variety with which you may have to deal.

While I was on active duty at the hospital, I operated (in the hospital and in private practice together) on about a hundred cases of strangulated hernia, and I kept full notes of nearly all these as well as of some in which my colleagues operated. It is from these notes, and from the memoranda of several clinical lectures, that I shall draw materials for my present scheme.

It may seem to you that a hundred cases of strangulated hernia should be sufficient for some statistical deductions: but they are not nearly enough. The varieties of hernia, their complications, and the different conditions of people in whom they occur, make so great a variety of cases, that it would need a tabulation of a least a thousand cases to obtain conclusions of real value. I shall, therefore, use my notes and recollections only to enable me to tell you what appear to be truths on some of the most important practical parts of the subject.

Our first subject may be the grounds for determining whether a strangulated hernia, or one supposed to be so, is to be submitted to operation. Speaking generally, one may say that when in a case of hernia signs of strangulation are present, and reduction by the ordinary means cannot be accomplished, the operation for reduction should be at once performed. But then, what are the sufficient signs of strangulation? and what are the ordinary or, better, the reasonable means for reduction without operation?

In all well-marked average cases, that is, in such as are neither slight nor very severe, neither (as some divide them) acute nor chronic, the following may be regarded as the signs of strangulation justifying operation. The hernia, usually reducible, or now first formed, cannot be reduced by reasonable means. If not recently formed, it is larger than usual, tense, firm, or even hard; without impulse, without resonance; painful, and tender on pressure, especially at its mouth and neck. The bowels do not act, though they may often be felt contracting, and may cause much colic and spasmodic pain, especially at the navel and the pit of the stomach. With this pain there is commonly some tenderness, with a feeling of tightness, in the abdomen, especially about the navel and between it and the seat of the hernia. The patient is often sick, vomiting nearly all the food and drink that he swallows, and, besides, a quantity of gastric and biliary secretion, or of the contents of the small intestines more or less diluted. The pulse and respiration are usually quickened and rather feeble; the patient feels and looks restless, low, and miserable—or, as it is called, 'anxious.' He cannot sleep or eat; and the hands and feet are apt to become cold, shrunken and dusky.

Whenever all these things are observed, and when they remain after such reasonable attempts at reduction without operation as I will presently speak of, you may hold that the operation should be done without delay. Much more, if possible, should it be done if these things be all worse than I have described. When the integuments over the hernia are inflamed, thick, sodden, and ruddy or emphysematous; when the whole abdomen is swollen, tense, and tender; when the vomit is just like the liquid fæces of the ileum; the pulse very rapid, feeble, and small; the skin cold and dusky and clammy; when the patient is dim in sense and mind, or in an anguish of misery with retching and hiccough; when all or the greater part of these elements of what the old writers called a *miserere* are combined; then, without trying any other method of reduction, you must instantly operate, though you may have only the slenderest hope of doing good, and a serious fear of seeming to do harm.

Thus far, one may speak very positively. In the cases which I have sketched, these are the sufficient signs of strangulation; and if the hernia cannot be safely reduced without operation, the operation must be done. But you will not see many cases without seeing some in which, although the hernia may be irreducible, yet the signs of strangulation are very slight, obscure, incomplete, or in some other way not sufficient to make it nearly certain that the operation is necessary. It is an easy rule for all these cases that, whenever you suspect that a hernia is strangulated, you should operate. If you will follow this easy rule, you will do some very bad surgery; you will kill a few patients whose lives you ought to save; and you will make many ill for two or more weeks who might be well in as many days or hours. You must avoid the easy rule, and learn the hard one of discriminating the cases that require operation. You must learn to discriminate those in which the operation must be done at once, without any previous attempts at reduction, and those in which before operation one or more attempts at reduction should be made with ether, chloroform or other helps. For the purpose of discrimination, let it be your design, in each case of strangulated hernia, not to choose any measure for its reduction till you have fairly weighed the signs of strangulation of which I have spoken. For convenience of thinking, you may divide them into local symptoms, including all the characters of the hernia itself, and the remote or general symptoms, especially the inactive bowels, the state of the abdomen, the vomiting, the pulse and respiration, and the general condition. I will try to tell how each of these, in its several degrees, may be estimated.

First, of the local symptoms, the irreducibility of the hernia, its unusual size, its tension or hardness, and the others which I enumerated, a few rules may include all that I can tell. It will be convenient to speak of irreducibility last; for, though it may seem as if it should be the condition decisive for operation, it is really a fallacious sign of strangulation; and, in some instances, no trial should be made to test its existence. As for the other local symptoms, their presence, in even a marked degree, is not decisive of strangulation, and is not sufficient to prove the need of operating when the remoter signs are not present. For the local symptoms may be found when a hernia or its sac is acutely inflamed, though not strangulated. In this state, which may follow injury, or even arise spontaneously, a hernia may become quickly larger than ever, firm and very tense, without impulse, very painful and tender, hot and red, and not at once reducible by any fair means. The sac may suppurate, the integument may slough; and yet there may be no strangulation and no need of an operation. I have, indeed, only once seen this sloughing of the integuments over a hernia; but the case is not likely to be without parallel, and was a glaring instance of the fallacy of the local signs of strangulation.

A very stout elderly lady had a large umbilical hernia, which became painful, tender, and irreducible; her bowels did not act, and she felt sick, but did not vomit. There appeared no urgent need for operation, and she was one in whom an operation was not to be undertaken lightly. But, after three days' watching, during which the local, but not the remoter, signs had somewhat increased in severity, I found that a large portion of the thin integuments covering the hernia had rapidly sloughed. I operated at once, though with little hope of doing good; for I supposed that the contents of the sac must also have at least partially perished. But they were not even severely strangulated; the mouth of the sac was too small for their return, but they were not tightly girt, and the intestine was only moderately congested. The sloughing of the integuments seemed due to inflammation in a very feeble person and an ill-nourished part; and with the same feebleness the patient died on the day after the operation.

You may find then, and not rarely, that the local characters usually present in a strangulated hernia may be imitated in an inflamed hernia which is not strangulated. And, though very rarely, many of the remoter signs—the constipation and the vomiting, the quickened pulse and breathing, and the rest—may exist when a hernia is inflamed but not strangulated. How, then, can you discriminate? Generally thus: in the inflamed hernia, without strangulation, the local signs precede, and greatly predominate over, the remoter and general signs; while, in a hernia which is inflamed after becoming strangulated, the remoter and general signs will still predominate over the local, and the history will tell that they preceded.

These means of discrimination, however, will not always suffice. You will meet with cases in which you will be uncertain whether the hernia be only inflamed and irreducible, or strangulated and inflamed; but in these cases you must not be uncertain of your practice. If you cannot very easily reduce the hernia, you must operate. The risk of operating on a hernia which is inflamed and not easily reducible is very small, in comparison with the risk of leaving one which is inflamed and strangulated; and even if you can find reasons for waiting, it must be with the most constant oversight, for an inflamed and irreducible hernia may at any time become strangulated, and will certainly do so if not relieved by rest and other appropriate treatment.

For a second rule: if the remoter signs of strangulation be present, the local signs are urgent for speedy operation in the same degree in which they are marked, or in even a greater degree; for severe strangulation is often associated with slight local symptoms.

But, to judge rightly from the local symptoms, each may need to be carefully weighed as evidence for the necessity of operating, or of adopting other methods of reduction.

In reference, then, to the chances of reducing a hernia without operation, it is a bad omen when one has quickly come down much larger than ever before. A great majority of patients give this as the beginning of their troubles. Sometimes they tell that, while making a great effort, they felt the descent come larger than ever; that they felt some pain or more than usual increase in the hernia, and could not reduce it in the customary way. More often the larger descent has happened without apparent cause. While the patient was sitting, or in bed, or quietly walking, the descent has occurred; but, perhaps, most frequently it has seemed connected with some diarrhœa, or colic, or spasmodic pain, or with some kind of turbulent movement of the intestines, for some hours, or a day or two, before the descent. In some cases, moreover, the unusual size of the hernia is attained at once; in others by gradual increase. In some it very quickly becomes painful; and these are rather less likely to be reduced than those in which pain follows more slowly.

I cannot give you any satisfactory explanation of these unusual descents of herniæ or of their becoming strangulated; but let them teach you not to be deceived by any notion that some unusual or startling event is necessary as a cause for the strangulation of an old hernia. I believe it may be held as a safe rule in practice, that the more a recently descended hernia exceeds its usual size, the less is the probability of its being reduced without operation; and I think that the probability becomes the less, the more the size of the hernia continues slowly to increase; for not a few of those that have suddenly become very large, and then have not increased, may be reduced without operation, if the patient be put under ether or chloroform soon after the descent.

Similarly, when general signs of strangulation exist, the harder and more tense a hernia is, the less is the chance of reduction without operation. The hardness may be due to any one of several conditions; but, to whatever it may be due, it is an untoward sign. It is especially so if the hernia be a small one. In large herniæ, the hardness may chiefly be felt at and near the neck and mouth of the sac, especially in inguinal herniæ; and you must take care not to be deceived by a sac which is soft and flaccid everywhere except at its mouth; for there may be strangulated intestine in the mouth of the sac, though the rest contain only soft omentum or fluid not sufficient to distend it. Nay, you must not let even a wholly soft condition of the hernia, or an open external ring, weigh-down against the well-marked general signs of strangulation ; for the piece of intestine at the mouth of the sac may be too small to give a sensation of hardness, or the whole hernia may be omental.

Again, if the general signs of strangulation exist, th more painful and tender a hernia is, the less, speakin generally, is the chance of reduction without operatio But here it is to be observed, that this rule holds less f recent than for old herniæ. A recent hernia may horribly painful, apparently because of the tension of t stretched fibrous tissues about the sac's mouth. Yet su an one may commonly be reduced with the help of chlor form ; but an equally painful old hernia, or one that h slowly become thus painful, may require speedy operatio And the operation must be all the more certainly do when, together with any of the remoter signs, there a other local signs, such as inflammation of the coverin of the sac, suppuration, emphysema, or the like. The are imperative for operation, without any previous attem at reduction.

And for another rule : if the general signs of strang lation—the constipation, vomiting, and others—be clear marked, and the hernia cannot be otherwise reduce you must operate, though there may be no marked loc sign at all. Or, even beyond this, if the general signs o a strangulated hernia be present, and there be anywher a swelling which may be a hernia, though it seem no likely to be a strangulated hernia, the operation must b performed at the seat of that swelling.

Reasons enough for this rule may be found in th many cases in which the local signs of a strangulate hernia are so little marked that the patient, having his attention spent on the misery of his vomiting and epigastric pain and other symptoms remote from the hernia, says nothing of the hernia itself. In not a few of my recorded cases, the hernia had been overlooked for a day or more; and the patient had been treated for spasms, colic, dyspepsia, or some other imitated disease, while the hernia was obscurely becoming hopelessly strangulated.

This last rule, of operating though there be no local signs of strangulation, may lead you into trouble; into the trouble and discredit of performing an useless operation and seeming to do much more harm than good. But this you must face; it is just in instances such as this that surgery must incur the risk of seeming to do harm rather than miss the opportunity of doing good. I have operated thus uselessly in four cases. One was an irreducible umbilical hernia, in which there was no strangulation, but vomiting and other signs of strangulation, caused by (I believe) gall-stones. Another was a simple femoral hernia, with an internal strangulation of a piece of intestine far away from it. The third was an inguinal hernia with the same complication. The fourth was an internal obstruction of some kind, with a suppurated inguinal gland. All the patients died, and my operations seemed worse than useless failures. But you must face this risk of seeming wrong.

You may have to go further than in these cases; and if, for instance, a patient have two herniæ that are irreducible, and signs of strangulation, and you cannot tell which is strangulated, you must operate on both. I saw Mr. Stanley do this; and no one coul blame him, though, when death followed, it was foun due to an internal strangulation distinct from both th herniæ.

These are the chief rules, so far as I have been abl to learn, according to which you may use the loca symptoms of a supposed strangulated hernia as a part o the evidence for determining for or against an operatio for reduction. And to these it may be briefly adde that the local symptoms are generally less severe in th old than in the young; in old herniæ than in new; omental herniæ than in intestinal.

Let me now go on to speak of the guidance to b derived from the remoter symptoms; and, first, fro the inaction of the bowels. This inaction, or rather th hindrance of expulsion, is a nearly constant sign i strangulated hernia, but occurs in so many other case that its sole presence is of little weight among motive for operating. Its absence is, rather, that which need study.

One or more actions of the bowels, after other sign of strangulation have set-in, are of no weight at all against the propriety of operating. They commonly occur, because usually after strangulation the part of the bowel below the constricted part empties itself. These actions of the bowels are not to be counted on eithe side of the question about reducibility or operation; an even a regular and frequent action is not an absolut prohibition, for the strangulation may involve onl omentum, or only a part of the circumference of portion of intestine. In these conditions, fæces may pass along the canal and be discharged.

I had to see a lady for what was considered an abscess in her groin. The swelling was just over the femoral ring, and contained fluid and air. I punctured it, and let out pus and air and liquid fæces, and presently I found a piece of hernial sac sloughed-off and lying in the abscess. This and the history of the case proved that the hernia had, about a week previously, descended when the patient felt a sudden pain while driving. The hernia was so small that it was overlooked; its pain and the griping which it caused were thought due to colic, and were so treated. The bowels acted sufficiently, and gradually the little hernial sac and its enclosed piece of the intestinal wall died and sloughed-off. Then came the signs of abscess over the femoral ring, and its outlet; and this was followed by complete healing and many years of health.

However, such cases as this are very rare; and you may hold by the general rule, that you should not operate when the bowels act frequently or regularly, unless all the other signs of strangulation, both local and remote, are well marked.

The state of the abdomen is as little or less decisive in cases in which you may be in doubt. Of course, if it be sensitive and tender on pressure, either everywhere or in parts near the hernia, still more if it be distended and the muscles hard, this is a addition to the reasons for operating, and, I may add, to the reasons for fearing that you may be too late. It is more to be remembered that, when the abdomen is not tense or tender, when may even feel nearly natural, yet you must operate other signs of strangulation be present, and the hern cannot be put back. For the changes of the abdom are not common near the beginning of strangulation, a to wait for them would often be to wait too long.

If I were asked which of the signs of strangulation would most rely on as commanding the operation, should certainly say the vomiting. Time after time, wh the other signs were feebly, if at all, marked, the vomiti has been a sufficient guide to a timely operation. Ma times, when all else was so quiet that it seemed rash operate, the vomiting proved that it would have be much more rash to wait; and not one instance can I fi in my notes in which neglect of the import of vomiti was not proved to be unwise. You had better hold t rule complete, that, when a patient has a hernia, recent become irreducible, and, with this, vomiting which cann be clearly assigned to something independent of t hernia, you should operate. I am obliged to say recent become irreducible, because a patient with an old irr ducible hernia may vomit, as anyone else may, witho any reason for suspecting strangulation; though in ev these old cases you must be very watchful lest the vomi ing be an early sign of strangulation. But the rule safe that recent reducibility and vomiting are enoug to justify the operation, even though there be no othe signs of strangulation present. Much more must th operation be deemed necessary when with these th other signs of strangulation, in even slight degree coincide.

And in thus judging of the vomiting, do not be too scrupulous as to its manner or its products. There are indeed some notable modes of vomiting when intestine is strangulated. The patient vomits all he drinks, and that soon after taking it; and besides, he vomits fluids of his own secreting; and this vomiting is commonly (at least in the later stages), with gushes of large quantities of fluid, without much retching or violence, as if the stomach slowly became full of its own secretions and of those of the upper part of the intestine, and then, without any preceding nausea, suddenly emptied itself.

When you see these kinds of vomiting with a hernia lately become irreducible, or even with any swelling that may be a hernia, you may be sure that you must operate. But do not wait for any supposed characteristic mode of vomiting; do not be misguided by the absence of some peculiar fluid; nay, do not be misguided by the absence of all vomiting; for I have known it absent in the case of a very large hernia, which was certainly strangulated, and on which I operated successfully. And do not be misguided by an apparent diminution in the severity or in the frequency of vomiting, or by the vomiting having begun as soon as the hernia descended; for this it often does. Any kind of vomiting, if it be repeated, is enough to justify operation in a hernia recently become irreducible. Let me tell an illustrative case, which taught me the more because it occurred in one whose life was of great value. He was elderly and weakly, but laborious in literature. For three days after the descent of a hernia, which could not be reduced as it usually had been, there was not a single sign of strangulation, except this irreducibility, constipation, and occasional vomiting. He had no pain in or near the hernia; no feeling or aspect of illness; no hardness or tension of the sac; and the vomiting was only occasional, and there were often many hours of interval. But, after the three days, abdominal pain suddenly set in, with coldness and faintness and wretchedness. Within two hours I operated; but it was too late; peritonitis had already begun, and the operation was useless or worse than useless. He died in twenty hours.

Cases like this are frequent. All seems pretty well; and then comes an inrush of indomitable symptoms. The hernia is not acutely inflamed; the patient is not greatly distressed; he flatters himself that he is better, and the similar flattery of his friends is yet stronger: all are averse from operation, and you can hardly persuade yourself to be resolute about it. But there should be no hesitation. I lost the chance of saving this man's life, by underestimating the importance of occasional vomiting as a signal for operation. If you lose such chances, you will be still more blameworthy; for you will have had more warning than ever I had.

And once more; do not be deceived by the cessation of vomiting in the extreme condition of strangulated hernia. This sometimes happens; but it is a token of evil rather than of good, if general improvement do not coincide with the cessation of vomiting. So, again, sickness may be stopped by narcotism; but here again there is no evidence of such general improvement as might justify waiting.

In the recent stages of strangulation, if it be not very acute, the respiration and pulse are little affected. The pulse is usually accelerated, and at first may be full and firm. I find that it was between 80 and 90 in a large majority of the ordinary cases which I have recorded; and the respirations are, generally, I think, in due proportion to the pulse. As the other signs of strangulation become more marked, these, I think, always coincide with them. The pulse usually becomes quicker, feebler, smaller, unless indeed after the warm bath, when its strength and size may be greatly increased; the respiration, I think, keeps pace with the pulse.

Thus, these signs corroborate the others in urging to an operation. I have not any notes or knowledge of cases in which the pulse or respiration was so inconsistent with other signs of strangulation as either to justify or to forbid the operation. But you may have this for a safe rule; that if, while you are watching a case, doubtful whether there be strangulation, the pulse and breathing should increase in frequency, you may believe that there is a commensurate increase in the reasons for operating.

Lastly, as to the patient's aspect and general condition, little that is definite can be said. You read of an anxious expression, and it is called characteristic, as many other fallacious things are. I should rather call it an expression of distress or of misery; but, however you may name it, be careful not to think that you must see it before deciding that it is right to operate for a strangulated hernia. The worse a patient looks or feels; the more he looks shrunken, worn, and old-aged; the more miserable his sensations; the more is it unlikely that his strangulated hernia will be reduced without operation. But the reverse is not true. I have operated with full right, as proved by the result, on patients who neither looked nor felt miserable or anxious in any sense of the words. And I have seen a patient looking well and tranquil in whom a femoral hernia, after seven days' strangulation, contained completely gangrenous intestine.

LECTURE II.

In the last lecture, I tried to show how the signs of a hernia supposed to be strangulated may be used for guidance in determining whether its reduction must be achieved by operation, or whether any simpler means for reduction may be used. In this lecture, I will speak of the trials at reduction that may be made, or may not be made, before operating.

For a general rule, your first examination of a patient with a hernia supposed to be strangulated should not be with a design to reduce it at once, but rather with a design to make-out what shall be done; what are the chances of reduction without operation; what helps shall be used to obtain it, if it be deemed desirable. Of course you may reduce the hernia, if reduction at once be easy; but do not go on trying if it be difficult. If the case be a bad one, you must first decide whether reduction without operation should be even attempted; and, if the attempt is to be made, what and how much it should be. For this decision, here are some general rules, which I find illustrated by my cases.

In very bad cases—as, for instance, when the patient vomits fæcal matter and has peritonitis[1] or is in collapse, with a small rapid pulse, hiccough, or other such extreme signs—there should be no attempt at reduction without operation. The risk of the operation is trivial in comparison with that of returning sloughing or ulcerating intestine into the abdominal cavity.

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[1] Note XVI.

When the coverings of the hernia are so inflamed as to make it probable that sloughing or suppuration has taken place beneath them, reduction without operation should not be attempted; and, even when they are less inflamed, none but very brief and very gentle efforts should be made, for success is improbable, and failure may be mischievous.

The longer the signs of strangulation have existed, the shorter should be the efforts at reduction; and the more acute the signs are or have been, the more gentle should these efforts be. Only, here, do not reckon among the acute signs the intensity of pain in recent or greatly enlarged herniæ; for many of the most intensely painful herniæ are reducible with the help of anæsthesia, though they may need as much force as is in any case justifiable.

The longer and the more numerous and forcible the efforts at reduction made, in any case, before it come under your care, the briefer and gentler should your ow efforts be; if, indeed, you do not at once decide tha enough has been done, and that there remains no fai chance of reduction without operation.

If you find that you have to do with a hernia whic has been habitually irreducible, and in which you hav reason to believe that, without any addition to them, th contents of the sac have become strangulated, you h better operate at once. You are not likely to reduce protrusion which even before strangulation was irreducib

Let me now suppose that, observing these rules, a first examination of a strangulated hernia leads to the decision that its reduction without operation is to be attempted. I cannot give a single rule of practice that shall always suffice for the next step after such a decision; but, speaking generally, and of a great majority of cases which come under treatment, it is a safe rule of practice that, after a very warm bath and a few hours' rest in bed—say from three to six hours, according to the case—a single attempt at reduction, of reasonable force and length, should be made; that, if this should fail, ether or chloroform should be given; and then, in some cases, but not in all, a second attempt should be made; and that, if this should fail, or if it should not be made, the operation should be performed while the patient is still insensible.

The hot bath should be used in all cases that are not very bad, unless in old and feeble persons, whom it might depress too much. Among these, its place may be supplied by very hot fomentations, or by warm poultices over the hernia and the parts near it; and these must be used as the next best things when a hot bath cannot be had. Helped by rest, all these things are certainly very useful, whether by relieving the tendency to irritable muscular action, or by relieving congestion, or by whatever other means. Especially you may see their utility in hospital patients, who are commonly brought-in wretched, chilled, and restless, with their herniæ tense, full and very painful, and their abdominal muscles starting into resistance at the least painful pressure. The heat of the bath, and bed, and recumbent rest, may remedy all this; and the hernia may become easily reducible, or may even reduce itself. It is commonly advised to have the bath so hot, and to keep the patient so long in it, that he may be very faint; and during this faintness to attempt the reduction while the patient is still in the bath. I more than doubt the prudence of this advice. It seems to me better to let the patient be simply soothed and relaxed in the bath, then to put him into bed wrapped in warm blankets, lying on his side, or on his back with his knees drawn-up, and his pelvis a little raised, and then, after a short time of complete rest, to attempt the reduction. The advantage of this plan is shown in the many cases in which the surgeon gets the credit for reducing a hernia which the house-surgeon has failed to reduce. The house-surgeon tries in the bath, and fails; the surgeon, an hour or two later, succeeds, not, or at least not always, by greater skill, but by reason of the more favourable condition of the patient after a time of rest and warmth, and of his better position—lying flat instead of half-sitting as in the bath. This employment of rest and the bath may be helped by opium whenever the hernia is very painful, and the patient too restless to have a chance of natural sleep. A grain of opium may procure the rest necessary for the quietude of the parts, but is less likely to be useful with femoral than with umbilical herniæ, and less likely with these than with inguinal.

In the old, and in others who may have had inactive bowels long before the strangulation, and in whom fæcal accumulations or abundant air may be in the large intestine, an enema even of a large quantity of liquid should

used ; for the emptying of the large intestine may
eatly facilitate the return of the hernia. Purgatives, I
lieve, had better not be thought-of, if there be any
arked signs of strangulation. There are no clear indi-
tions for determining the cases in which they might
ssibly be useful; and, if they do no good, they may do
ievous harm. I do not doubt that some have gained
lvantage from purgatives; but in my notes and memory
find several instances of mischief, and no cases in which
ere seemed reason to think that the patients were the
orse for not taking any sort of purgatives after evidence
strangulation.

After the warm bath and rest—and still speaking of
ly the majority of cases, for in some there is no time
r these things—you may give ether or some other
æsthetic, and try to reduce the hernia. How you are
do this, I cannot tell you now; nor what time and
rce are reasonable to be used. You must imitate what
u see done by men of repute, and use the best common
nse you can. I can tell you some things that you must
t do. You must not go to work as if you were re-
lved to reduce the hernia *per fas aut nefas*; you are
t to spend an hour or even half an hour about it, or
e all your force, or take off your coat and turn up your
irt-sleeves, or kneel on the bed that you may press
ith the more weight; you are not to let half a dozen
ersons try their hands in turn. You are not to do these
r the like things, all of which I have known as the
ources of dire calamities. You are to be gentle and
elf-restraining, mindful of the delicacy of some of the
tructures you are handling, and that you may do them

much more harm than would come of the operation which you are trying to avert. These cautions are the more necessary because, when the patient is insensible you have nothing but your own sense and senses to tel you how far you may go without doing harm. The grea value of anæsthetics is that, by abolishing sensation, the put an end to the muscular resistance to reduction whic whether he will or no, the patient makes when hurt b the pressure of his hernia. Hence they are most usef in the herniæ of which the difficulty of reduction is chief due to muscular resistance; in the recent, or in the recently much enlarged; in the inguinal more than in the femoral, and in these more than in the umbilical; in the painful more than in the painless. They are by so much the most potent helps to the reduction of herniæ, that it may seem as if it would be right to use them without waiting for the influence of a warm bath, or recumbency, or any similar means. Sometimes it is right thus to do, especially in herniæ that have only recently come down and are intensely painful. But more commonly, if there would be danger in waiting for three or four hours, it is because strangulation is so far advanced tha the operation ought to be done at once, without an previous attempts at reduction. If there be no suc extreme urgency for immediate reduction, there can nothing but advantage in the use of the bath and three or four hours' rest in bed; for they may make hernia reducible, or, even if they fail of this, they cause changes in it which are beneficial both fo performance of the operation and for the probabilit recovery after it.

I have been speaking lately of the plans for average or medium cases; and before, of the cases in which no attempt at reduction without operation should be made. You may ask, Are there any cases in which it is justifiable to wait longer after the warm bath and rest and ether or chloroform and a fair attempt at reduction have been tried and have failed? I will not venture to say that such a case for waiting cannot happen; but I am clear that the rule, with barely an exception, must be that, when you are satisfied that a hernia is strangulated, and you have failed to reduce it with such helps as I have indicated, you should operate. While the patient is still insensible the operation should be done; and you should prepare for it before giving an anæsthetic. Of course, if you are satisfied that the hernia, though irreducible, is not strangulated, you may wait; but in this case you must watch almost impatiently, for an intestine or omentum that cannot be reduced is very likely soon to become strangulated, and so is one that is inflamed or blocked-up in a hernial sac. Still, if no signs of strangulation, especially if no vomiting, should supervene, you may wait from day to day; but if the signs do occur, especially if there arise vomiting, or increase of pain, or increasing rapidity of pulse and breathing, then you must operate at once, and you had better not try again at reduction. The trial is much more likely to do harm than to do good: you had better operate at once. Nothing does more harm to a strangulated or nearly strangulated hernia than the force of an unsuccessful attempt at reduction.

While you are waiting, you may use, in different cases, ice[1] or warm dressings, enemata, aperients, or opiates. I cannot tell you the indications for each of them. I have not had sufficient experience of waiting to have weighed the several values of these things. But there are at least one or two conditions favourable for all cases in which you desire to wait; namely, rest in bed and very sparing food. Nothing should be allowed to disturb the patient's rest, and no handling of the hernia should be permitted. Part of the value of ice and poultices and other like applications is this, that they all keep hands off.

Of other supposed helps I will not speak—of tobacco, and curious postures, and shakings with the legs up and the head down, and cupping glasses, and other like and unlike things. They are ingenious wrong-doings, more dangerous than the operation which they are intended to avert.[2]

In speaking of herniæ as being reducible, I have had in mind only such as can be completely and certainly reduced. But it is not uncommon to meet with cases of strangulated hernia, in which the reduction is doubtful or partial. As I looked through my cases, I found many of these recorded, in which there was delay in sending patients to the hospital, because surgeons believed that part of the hernia was put back, and hoped that the rest would soon go; and some in which, even in the hospital, re was mischievous delay through the same fallacious xe. It is not easy to say what takes place in these tial or doubtful reductions. Some patients will tell u that the whole never did go back, and that what w seemed to be reduced might only be an additional trusion. Sometimes, I think, air is pushed back from intestine, or fluid from the sac; sometimes omentum put back; sometimes, perhaps, part of the intestine, metimes nothing—the whole notion of reduction being acious. The liability to deception is greater than you uld imagine. You may feel a thrill of receding fluid, a gurgling of air, which you may suppose to be what e describe as the characteristic gurgling (as if any- g of the kind were infallibly characteristic), or some- g slipping back; but all may be fallacious. There is practical rule for all these cases. If the symptoms of ngulation be not relieved by the supposed reduction; he vomiting continue, or the pain, or the patient's e of distress, or any other of the distinctive symptoms hen, without delay, you must operate. A partial uction of a strangulated hernia, if it be not followed a complete relief of symptoms, is in nothing better n no reduction.

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[1] There are strong authorities in favour of the use of ice or other cold applications over large herniæ:—Lawrence, 'Treatise on Hernia,' 5th edit., p. 167; Teale, 'Abdominal Hernia,' 1846, p. 104; Erichsen, 'Science and Art of Surgery,' 5th edit., vol. ii. p. 449; Haward, 'St. Geo. Hosp. Reports,' vol. i. p. 125; Birkett, 'Holmes's Syst. Surg.,' 2nd edit., vol. iv. p. 699.

[2] Note XVII.

I may add that most doubtful reductions are not uctions; and of the partial reductions, none are safe ept some of those in which intestine is put back and omentum remains in the sac.

Be prepared also for cases in which reduction is, or ns, complete, and yet the signs of strangulation are relieved. In these, a hernia may be returned *en se*, or pushed into another sac, or between the peritoneum and fascia; or the case may be one of hernia complicated with an internal strangulation, or one of many other conditions so hard to discriminate and deal with that I can give only one general rule for their management—viz., if you can feel a lump at or near the hernial ring, as if there were something which may be a strangulated hernia, then you must operate.

To end what I should say respecting the propriety of operating, I ought perhaps to speak of the condition of the patient as affecting the risk of the operation, by reason of age and general health and various complications. Among my cases, I find not only many of the fattest and feeblest, but examples of complications with phthisis, acute and chronic bronchitis, aortic constriction, phlebitis, gastric ulcer, diseased bladder, intestinal disorders of various kinds, and internal strangulation. Patients such as these one would not wound for any trivial good; but, with a strangulated hernia, the peril of doing the operation can hardly ever be so great as the peril of leaving it undone. Old age and feebleness, fatness, intemperance, or unsoundness of whatever kind, may add to the risks of this, as of any other operation; but all these risks must be accepted. A patient must not be allowed to die with a strangulated hernia, if by any means whatever the strangulation can be relieved; and you must not be averted from the operation by any consideration of the number of deaths that follow it. The deaths after the operation may be 50 per cent., but the deaths due to the operation are not more than 5 per cent., and even these would, probably, have been deaths from the hernia the operation had not been performed. The great p portion of deaths is made up of those in whom the strangulation has done mischief which the operation cannot remedy. It is not unfair to maintain that, speaking generally, the deaths after operations for hernia are only to be counted as failures to save life, while the recoveries are to be counted as lives saved from certainly impending death.

LECTURE III.

THE design of the operation for hernia is to divide the structures which tightly gird the protruded parts, so that these may be returned. These structures, forming what is called the stricture, are in some cases outside the hernial sac; in some, in its very substance; and, according to these and other differences, the operation may in some cases be completed without opening the sac, and in other cases must include this opening. The advantages of the two methods have been often discussed, and I may begin by speaking of them.

There can be no doubt, I think, that if all the rest of the operation were always the same, the advantage of reducing the hernia without opening the sac[1] should always be sought. Thus to reduce a hernia is the next best thing to reducing one without any operation at all. The structures divided externally to the sac are insignificant, and it might be difficult to name an operation less endangering either life or health than this would be. The peritoneum is not wounded; the intestine and omentum are not touched or exposed to air; the wound may be small; any hæmorrhage may be easily stayed and must be all external. Thus the wound is favourable for speedy healing, and erysipelas or any other mischief is not likely to extend to the peritoneum.

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[1] Note XVIII.

These are sufficient reasons for always wishing and generally intending to operate without opening the sac, especially in old and feeble people and in cases of large herniæ. But you must not let your wishes carry you too far. They may lead you into great mischief. For, first, there are many cases in which the contents of the sac are not fit to be returned into the abdomen—for instance, when they are sloughing, or deeply ulcerated, or strangulated within the sac. The risk of returning these is so much greater than that of opening the sac, that you should not hesitate to open it whenever you have any, even slight, reason to suspect any of these conditions of the sac's contents. And such suspicion there must always be in these sets of cases—1, in those in which the strangulation has existed long, say four or more days, whether with slight or with severe symptoms; 2, those, of whatever date, in which the signs of strangulation are very acute; 3, those in which there are very marked signs of advanced or low inflammation in and about the sac; 4, those in which the contents do not go back easily and within two or three minutes after all stricture is fairly relieved. And in measuring this ease of going back, you must be scrupulous; for I have certainly done harm, and seen more done, by trying too long to reduce herniæ without opening the sac—fingering and clearing the parts, and pressing them many times; damaging intestine, and exciting suppurative inflammation all about the sac; so that when, at last, the operation was completed, much more mischief had been done than if the sac had been at first straightforwardly opened.

I think, then, you may take this as a safe rule in all ordinary cases: intend to complete the operation withou opening the sac, but give up your intention if you fin any reason to suspect complications, or very morbid state of the parts within the sac, or any such difficulties a would lead to the use of forcible or long-continued effort at reduction. Of course, the more you practise th operation, the less frequently will these difficulties hinde you; but you may keep to the same rule, and think wiser to avoid difficulties than at all cost to overcom them. And, finally, when you are in doubt, open th sac; for though the advantages are, on the whol clearly in favour of not opening the sac, yet the amour of advantage is not so great as to justify any considerabl risk for it. Rough statistics of operations are not to b taken as measures of this advantage. In all the wor cases the sac must be opened; and, of these, a large pro portion will die whatever be the manner of the operatio

As to the method of operating, there are many, an some good, anatomical rules on which I shall not touc They are admirably laid down in "Lawrence on *Hernia* I will only give some general rules, such as may be usef in nearly all cases.

In all, you should decide at first, if possible, wher abouts the stricture is, so that your first incision may l fairly over it, and give you room to act on it witho needless length of cutting. In femoral hernia, you m be sure that the stricture is at, or within half an inch the femoral ring; and this is near enough for guidan for the first incision. In umbilical hernia, the mouth the sac is always the seat of the stricture; and if yo incision be above the hernia the lower part of it may right over the stricture. In inguinal hernia, the stricture is, in the large majority of cases, at or within the internal inguinal ring; and the incision should extend from the internal ring to beyond the external ring, and (according to the characters of the hernia) to a greater or less distance towards or along the scrotum. But, in inguinal hernia, the stricture may be at the external ring, or, if formed by the thickened mouth of the sac, may be pushed up towards the abdominal cavity, or down along the canal, or beyond the external ring to some distance in the scrotum. Moreover, in some rare cases of congenital hernia, there may be two strictures—one at each end of the open canalis vaginalis. For these cases, it is useful to apply a rule devised, I think, by Mr. Luke, for ascertaining the seat of stricture; namely, to observe at what point along the course of the hernia the impulse on coughing ceases. For, when a hernia is strangulated, the impulse can be felt as far as the stricture; beyond that, it cannot be felt: therefore, where the impulse ceases, there probably is the stricture; and this part must be fairly included within the length of your incision.

In femoral hernia, your first incision may be vertical, in a line drawn straight down from the spine of the pubes—a projection which you can always easily feel. This incision seldom needs to be more than an inch and a half long, and may sometimes be less. In umbilical hernia, a vertical incision of an inch and a half or two inches will suffice, in the middle line, so as to reach either the upper or the lower border of the mouth of the sac. But I am disposed to believe, though I have not tried it, that in large umbilical herniæ, two incisions, going to opposite borders of the ring, would be better than any one. In inguinal hernia, the incision should take the direction of the neck and upper part of the hernia, and its length must vary according to the size of the parts to be returned.

Through these incisions you must go on and on through the several layers which your anatomical dissections of healthy parts will sometimes enable you to recognise, till you come to the sac. The thickness of these layers is more various than you may suppose. Especially in small femoral herniæ, you will often find an unexpected quantity of fat about the sac; and in umbilical herniæ, very much more fat about the mouth of the sac than the thinness of the integument over it would at first suggest.

Through whatever thickness, you must continue cutting in the same direction; and when you are fairly on the surface of the sac, keep to the same line. Do not clean the front of the surface of the sac; do not separate it from the surrounding textures. No good can come of this, but much harm may. You want nothing more than a linear division of the stricture, whether with or without a linear opening of the sac. All that is done on either side of this line is useless or mischievous.

When you have thus fairly reached the sac, and have exposed its neck and mouth or narrowest part, you must proceed differently accordingly as you propose to complete the operation without or with an opening of the sac. In the latter case, you open the sac first near its mouth, and then along the length and full extent of your xternal incision, and then divide the stricture from ithin. You may do this on your finger-nail or a irector, and with cares about the intestine and other ructures which are insisted on in all handbooks. In e former case, when you intend not to open the sac, u must find where the stricture is, and divide it outside e sac.

Among femoral herniæ, there are differences as to e seat of stricture which I cannot explain to you, but hich my cases made very clear to me. In some in- ances, as you trace up the neck of the sac, you find it ghtly banded across by the layer of fibrous tissue called ey's ligament—a layer traceable as a falciform edge of e fascia lata, where that fascia, bounding the upper part f the saphenous opening, is connected with the crural rch, and is thence continued to Gimbernat's ligament.

Sometimes a fair division of this layer of fibres up to he edge of the crural arch is sufficient to render the ernia reducible; and here, with the reduction, should d the operation. But, in more cases, this is not suffi- nt; and you may feel the stricture formed by bands fibres which encircle the neck of the sac, and which ust be divided, band by band and layer by layer, till ne can be felt. These fibres are part of the deep ral arch, beneath which the hernia has protruded. ry rarely, however, even the division of these is not ficient; for the stricture is formed by thickening of mouth of the sac itself or, as I have once seen, by e sharply in-folded but not thickened mouth of the sac. e thickened mouth of the sac, which is a common use of stricture in inguinal hernia, is very rare in femoral; but it certainly does occur; and, in any case well suited for the operation without opening the sac, you may try to thin the mouth of the sac without opening it, and thus to make it extensible enough for the return of its contents. You may try this; but the chances of success are small. You are much more likely to cut into the sac at some thin place; and, when you have done this, you had better enlarge the opening and divide the stricture from within.

It is this uncertainty as to the exact seat of stricture in strangulated femoral hernia, which makes it advisable to put-on a strong resolve not to use too much time or force in endeavouring to operate without opening the sac. You will be apt to think, when you have divided one thing, that now you will be successful; and you try to press back the bowel. But you fail; and then you divide something else, and try again; and now again you fail. And thus you may go-on, till you have done more harm than you would have done by a straightforward opening of the sac and immediate easy division of its stricture and return of its contents. Keep this in mind; that an easy reduction from an open sac is better than a difficult reduction from a closed one.

In umbilical hernia, the case is simpler. The stricture is always in the tough fibrous tissue of the sheath of the rectus. When you have reached this, commonly going much deeper through fat than you expected, and not only deeper, but further under the sac, you may be able to divide the stricture without opening the sac; but this is difficult, for the sac is always very thin, and there may be little tissue between it and the fibrous ring. Still it is well to try, but not too long. You are more likely to open the sac at or close by the stricture; and, if you do this at all, you may as well save time and force by opening it more widely.

In inguinal hernia, the stricture is in many cases, and was in the majority of those on which I operated, formed by the mouth of the sac, thickened and hardened by what appears to have been an inflammatory process, producing a scar-like and contracting tissue.' This tissue forms a band about a fourth or a third of an inch in width, and about a line in thickness, and sometimes has a thin sharp inner edge. By the way, let me say that the formation of this band is not the result of wearing trusses. I have seen it very marked in patients who never wore a truss; and I have seen the sac thin and soft in every part in those by whom trusses have been long worn. But, however it may be formed, this annular thickening and contraction of the mouth of an inguinal hernial sac is a common cause of stricture. On account of it, you should proceed at once to expose the mouth of the sac; unless, indeed, you should have found the tissues outside it so tight that you may fairly believe the division of them will be sufficient for permitting the reduction of the hernia. When you have exposed the outside of the thickened mouth of the sac, you may still achieve the reduction without opening, by gradually thinning the mouth—dissecting-off band after band from any portion of it. Sometimes the mouth will yield sufficiently at a part thus thinned to stretch and allow the reduction; but more often, I think, you will fail, and will have to open the sac and divide the stricture from within.

Here, as with femoral hernia, be scrupulous not to spend more than fair force and time for the sake of the reduction without opening the sac. It is a good thing to succeed; a very bad thing to fail. You must measure how much risk of harm it is right to incur for the hope of doing good.

If the reduction be accomplished without opening the sac, you will have attained the best immediate object of the operation; but remember that fallacies of reduction are possible here as well as in the cases in which no operation has been done; they are, however, less mischievous, for, if the stricture be completely divided, there will be no strangulation of whatever remains in the sac. Especially you may have no fear if, as commonly happens, after returning intestine, some omentum remain in the sac. This will do no harm; but if more than omentum have remained in the sac, and the signs of strangulation be not relieved or lessened, you must operate again and open the sac, regarding these cases in the same light as those of partial or doubtful reduction, of which I spoke in the last lecture.

But suppose the sac opened, as it should be in nearly all bad cases, and in many which, though they are not bad, yet may be called difficult, here may occur the most difficult question of all, What is to be done with the contents of the sac? Of course, in most cases you are to return them; but in many you are not; and which are which?

Look first to the character of the fluid which, in most cases, you will let-out of the sac. In most cases, not in all; for, in some small femoral herniæ, especially in very thin dry people, and in many umbilical herniæ, and in any that contain a large quantity of omentum, there may be no fluid, or too little to be distinctly seen. But if there be enough to judge from, you may deem it a good sign if the fluid is clear, and yellowish like serum, or, rather, like liquor sanguinis—for it will coagulate spontaneously. This indicates only such an exudation of fluid as may come from a simply congested piece of intestine, or from a piece not badly inflamed; and the cases would be rare, if there can be any, in which intestine found behind fluid such as this might not be returned. The same may be said when with fluid such as this there are flakes or bands of lymph or fibrinous exudation; for these tell of only such inflammation as may safely be recovered from when the intestine is returned. I am disposed to say the same of the cases in which the fluid is clear, but more or less deeply blood-stained; for this exudation of blood-cells or blood-colour is not characteristic of any serious morbid change in either the sac or its contents. But when the fluid of the sac is turbid, brownish, muddy, it tells of more advanced changes in the intestine or in the omentum; and the further it goes in this direction the more carefully must you consider whether these are in a fit state to be returned. You will probably have to decide that they are not fit, when the fluid has a distinct fæcal or putrid odour; and of course they are not fit when the fluid has fæcal matter mixed with it.

I do not venture to say that the characters of the fluid contents of the sac of a strangulated hernia are to be absolutely relied-on as guides for practice; but they are good evidence to be taken into the general account, for they fairly represent the state of mere congestion or inflammation, or more or less advanced decay or decomposition, or giving-way of the walls of strangulated intestine and omentum.

Not rarely, when you have divided the stricture and returned the contents of the sac, fluid runs from the peritoneal cavity. I do not know any rule of practice but that you must let it run as long as it will, and, if it be of very unsound appearance, not close the wound till the fluid has ceased to flow, if even then.

As to the omentum which the sac may contain, and what to do with it: if there be a small quantity—say two or three square inches—and this be not adherent, and not more changed than by congestion or slight inflammation, there can be no question that you are to return it after the intestine; and if there be a piece of even very large size, and not more changed in texture, you had better return it if you can without much force or expense of time. But it sometimes happens, when the abdomen is tense with over-filled intestine, that you cannot return a large piece of omentum without much difficulty. What then? Shall you cut it off or leave it in the sac? I advise you to leave it. I believe that the cutting-off, with the necessary ligatures or other fastenings of vessels, adds to the dangers to life; while the leaving of omentum is only sometimes followed by greater difficulty in the fitting of a truss—a difficulty which is not great enough to justify any risk of life.

Still more may this rule of leaving omentum in the sac be observed when a large piece of it is hardened and thickened as by old disease. When a small piece is thus changed you may, I believe, return it.

When omentum is adherent to the sac, but in other
pects fit to be returned, you should break the ad-
sions and return it, after stopping all bleeding. If it
not fit to be returned, leave the adhesions; and in
y case do not break adhesions so near the mouth of
sac that their vessels are likely to bleed into the ab-
minal cavity.

When omentum is sloughing, or nearly sloughing,
ve it, that it may cast its sloughs.

But the chief questions in these operations are con-
ned with the state of the strangulated intestine and
manner of dealing with it. You are to judge chiefly
m the colour and the tenacity. Use your eyes and
ur fingers; sometimes your nose; very seldom your
s, for what you may be told about time of strangulation,
sations, and the rest, is as likely to mislead you as to
de aright.

As to colour, any tint, from the natural grey through
ous shades of rosy or ruddy pink, or redness, up to
deepest crimson even verging on blackness, may be
stent with fitness for returning of the intestine, if the
re be good. All these tints may be due to conges-
nd stagnation of blood, or to extravasation of blood
e intestinal walls, and all these may have been with-
h inflammation as would spoil the texture of the
e, and may not have endured long enough to kill
n disposed to say that you may return intestine of
ur short of blackness, if its texture be good; if it
, elastic, well-filled out, and resilient, not collapsed
; and the more the surface of the intestine shines
ns, the more sure you may be of this rule.

When a piece of intestine is thoroughly black, I believe you had better not return it, unless you can be sure that the blackness is wholly from extravasated blood. It may not yet be dead, but it is not likely to recover; and, even if it should not die after being returned, there will be the great risk of its remaining unfit to propel its contents, and helping to bring on death by what appears very frequent —distension and paralysis of the canal above it. But, indeed, utter blackness of strangulated intestine commonly tells of gangrene already; and of this you may be sure if the black textures are lustreless, soft, flaccid, or viscid, sticking to the fingers or looking villous. Intestine in this state should never be returned.

Colours about which there can be as little doubt, for signs of gangrene, are white, grey and green, all dull, lustreless, in blotches or complete over the whole protruded intestine. I cannot tell why there should be so many colours in different cases, or sometimes even in the same case; but all are alike certain signs of gangrene, and they are always combined with loss of due tone and texture of the intestinal wall. Intestine with these marks, even though they be small, must not be returned.

Then, as to the texture of the protruded intestine: it should be, for safety of return, thin-walled, firm, tense, and elastic, preserving its cylindrical form, smooth, slippery and glossy. The further the intestine deviates from these characters, the more it loses its gloss and looks villous, the more it feels sticky, and is collapsed and out of the cylinder-form, the softer and more yielding, the more pulpy, or like wet leather or soaked paper, the less is fit for return. And when these characters are ombined with such bad colours as I have described, the ntestine must be taken to have perished, and had better be laid open, that its contents may escape externally and do no harm.

But, short of gangrene, there may be ulceration of the walls of the intestine. The usual place for this is where the intestine is girt by the mouth of the sac, and is most frequent in femoral herniæ long strangulated. these it is especially the sharp hard edge of Gim- rnat's ligament which seems to cut into the intestine, nning its wall and at last piercing it: and the chance this having happened is enough to justify the rule that, ere the strangulation has been sharp and long, the estine should be gently drawn-down after the stricture divided, in order to see that there is no great injury of walls where the chief pressure of the stricture has len on them.

Here, too, because they are similarly dangerous to e, I might speak of laceration of the intestine in too olent attempts at reduction, or wound of it in operation; it I have no personal experience of such cases, and can ld nothing to what you may read in the best treatises n hernia—such as that of Sir William Lawrence, or in e chapters devoted to hernia by Mr. Erichsen in his *cience and Art of Surgery*, or by Mr. Birkett in Holmes's *ystem of Surgery*. These will supply you not only ith their authors' experience, but with what they have athered and set in order from the writings of others. imiting myself to what I have studied in my own cases, must omit many things besides ruptured and wounded intestine; such as the various complications of strangulated hernia with hydrocele and misplaced testicle, with varicocele, and with accidents of the operation, such as hæmorrhage from the epigastric or the obturator artery. Some of these things I have never seen; others I have seen only once or twice, and have learned concerning them nothing but what you may learn by reading the works to which I have referred you.

But, as to the treatment of sloughing and ulcerated intestine of which I was just speaking, I will only say that it has always seemed to me more prudent to incur a great risk of having a permanent external fæcal discharge by leaving the intestine at the wound, than to add to the risk of life by returning anything which it may seem possible to repair by suture or any such means. Of course, these means are not to be thought-of if the sloughing or ulceration be of more than very small extent; but even in the smallest, unless in some very rare cases, I would not add to the inevitable risk of life by returning the damaged intestine. In cases of hernia, the saving of life is so much more important than anything else, that we ought not to incur a risk of life for anything less than the highest probability of saving a patient from some life-long distress.

LECTURE IV.

THE former lectures have related to the diagnosis of strangulation of a hernia, and to the operation necessary for its relief. This last will be on the treatment of cases after operation. In looking over my notes of hernia for illustration of this matter of after-treatment, I was struck with the great difference between the practice of late years and that of thirty or more years ago. In reference to all the subjects of the preceding lectures—the discrimination of the cases needing operation, the modes of operating, and generally, the pathology of strangulated hernia—knowledge has, we may believe, increased, but without any material change of opinion; but, when we ome to questions about treatment of patients after eration, we seem to know, and certainly we believe, ngs widely different from those which were generally ieved when I was a student.

The present general rule of practice after operation, ases likely to go on well, is to do what is called ing; to wait till some reason for interference is ifest; and, while waiting, to take care that the patient have fit bedding, fit air, fit food, quietude, and good ing. All these prime conditions of health are called hing.' The contrasted 'something' would be bleed- ctive purging, or other restless interference with the l course of recovery, such as was in vogue in the earlier years of my case-taking, and such as had not quite ceased twenty-five years ago, when I became assistant-surgeon to the hospital. In this contrast you will see only an illustration of the great change of opinion respecting treatment which may be observed in a wide range of medical practice, as in cases of fever, acute rheumatism, pneumonia, and all acute inflammations—a change shown, not by substituting one remedy for another, but by letting many diseases and the effects of many injuries take their natural course, in the confidence that they will come to a natural good end, and that we have no medicines potent to alleviate or cure them. But let me say that, while I have no doubt that the present general plans of treatment are better than the past, I yet do not believe that the past plans were so mischievous as some have told of them. I have no recollection of serious harm being often done by bleeding in the many cases of illness, whether slight or severe, in which, during my apprenticeship, I practised it. In a few cases I think it was mischievous, but in the great majority it was harmless. In many, it gave such relief from pain or other distress as naturally strengthened the belief that it did real good; and in a few cases I do not doubt that it was beneficial. Still, in cases of strangulated hernia, whether before or after operation, I think you never need bleed patient. I do not believe that bleeding ever saved the life of a hernia-patient which, but for the bleeding, would have been lost.

And as for purgatives, though I believe they were often mischievous and more often unnecessary, yet I do not doubt that they were, and still may be, sometimes very useful; and I wish I could tell you more exactly than I can the class of cases in which they should be used. At present, I know only one—the class, namely, in which it is clear that strangulation has occurred while the bowels are overfilled, and in which the strangulation is acute and quickly relieved.

Now for the general rules of treatment after operations for strangulated hernia. Bear in mind the complicated cases with which you may have to deal. In each case there are, or may be, these constituents: the intestine damaged by displacement and by being forcibly replaced; the operation-wound; the effects of an anæsthetic; the intestinal disorders which, at least in many cases, preceded the strangulation, and may continue after the operation; the effects of aperients and other medicines given for this previous disorder or for the strangulation; the inflammation or worse than inflammation of the sac and its contents, which does not subside immediately after even a successful operation.

When a case has been timely operated on, all these things may amount to nothing worse than may be left to the course of spontaneous recovery; and a case that goes-on well requires that 'nothing' in the way of treatment of which I spoke just now. But, when anything goes amiss, you must have in mind all the things I have enumerated, in your endeavour to interpret the signs of wrong and to amend it. Very few cases are more difficult to manage than those which do not go-on well after operation for hernia. There are terribly few which, having gone out of the right course of recovery, can be brought back to it.

What, now, are the signs of going-on well? Chiefly a consciousness of complete relief; that is, of relief not only from the local distress, but from the general misery. Deceptive as sensations often are, this rarely is; and, if a patient be not conscious of relief, you must keep on the alert, and suspect that something is wrong. Besides, there should be no pain or acute fever. Mild traumatic fever there may be; but there should be no more; no nausea or sickness, but general quietude or sound sleep, a gradual recovery of appetite and strength, and, after a time, action of the bowels. I say, after a time, wishing to be indefinite. Sometimes the bowels act very soon after the operation, and this may be harmless; but I think it is not good, for it indicates either the effect of physic wrongly given before the operation, or some irritation of the bowels which would be better at rest.[1] They do best who, while relieved from their distress, have no action of the bowels for some days. I know no necessary limit to the quietude in which the bowels may be left. In one of my cases, they did not act for nine days after the operation; and I have heard of others where, without any disadvantage or discomfort, there was still longer inaction. But this is, I think, a good general rule—to leave the bowels at rest for four days after the operation; then, if all seem well (not otherwise), to order a simple enema; and if this be not sufficient, some aperient. I know no advantage in leaving the bowels longer inactive than these four days; and I had one case in which great inconvenience, to say the least, was occasioned by a very large accumulation.

[1] Note VIII.

After the action of the bowels, if all still go on well, ere is no need of considering anything but the patient's omfort; and the local treatment and the diet may be of e plainest kind. Excess is more likely to be mischievous an spareness.

Among cases that do not go-on well, there is a great ariety; but I shall speak of those alone in which the rong is in something peculiar to hernia. Of course the ound of the operation may lead to any of the evils that ay follow other wounds, as erysipelas, pyæmia, and the est; but these I shall almost pass-by.

Among my cases, I find some in which ill-looking mptoms, such as diarrhœa or colic followed the operaon, but meant no serious mischief, being only the ntinuation of the intestinal disturbance which preceded e strangulation. I have already spoken of this matter; t it is worth repeating, that it is common for the scent and strangulation of a hernia to be preceded by me intestinal disturbance, the signs of which may be spended during the strangulation, and renewed after the eration. Whatever the disturbance, it may be treated, left alone, as if no operation had been done; but it ust not be forgotten in estimating the meaning of any mptom of ill-doing.

Of these symptoms, one of the chief is vomiting. If patient vomit once or twice soon after an operation for rnia, it may only be because the stomach was filled ith secretions before the operation, and now finally mpties itself. In this is no harm—perhaps some good. ut, if the vomiting continue, it may be a sign of the ravest import. It may, indeed, be due to chloroform or ether. I have seen several instances of this, and among them one in which chloroform-sickness continued for three days after the operation, endangering the patient's life. Generally you may distinguish the vomiting due to chloroform from that due to peritonitis or unrelieved strangulation, by its being attended with horrible nausea, like sea-sickness; by its producing no fæcal fluid or abundant gastric secretion, there being more retching than vomiting; and by the patient's feeling relieved of his hernia, however wretched he may feel with his nausea. If the pain and distress of the hernia be relieved by the operation, and, except for vomiting, all seem well, you may be nearly sure that the vomiting is due to chloroform, and commonly you must wait till it spontaneously subsides. I believe you cannot cure it, and food put in the stomach only aggravates it. The patient had better be without food, if in fair strength; but, if very feeble, he had better be maintained with enemata of milk, eggs, beef-tea, and wine.

If vomiting go-on for six or more hours, or for days, after the operation, and be not due to chloroform, it is a very bad sign—I had nearly said a mortal one; for generally it tells that the operation has failed in its design. Either the strangulation is not relieved, or the intestine is paralysed above the strangulation, or there is peritonitis, or sloughing, or perforation of the intestine, or some such trouble. Very rarely the untoward conditions indicated by continuous vomiting are relieved spontaneously or with repeated doses of opium.

The persistence of abdominal distress, with tension and pain and colic, after the operation, is not so serious.

If other symptoms be relieved, these probably will be; and they may generally be treated with large enemata or aperients, such as the sulphate and carbonate of magnesia. But there is no need of haste to give these things. The abdominal troubles which they are to relieve are not due to serious disease, but probably to intestinal accumulation, which began before the strangulation, would be very slow to destroy life, and may be allowed to remain till it can be treated without risk. In such a case as this —a not very rare case—when all seems well except the abdominal pain and tension, be on the watch. If there be no change, do nothing. With time, the intestines will empty themselves. If there be increase of pain, without increase of pulse or breathing or other evidences of fever or inflammation, give enemata or aperients. I am sure you may manage cases of this kind better and more deliberately than I did some of those which I have recorded. I see now that I was over-busy with them, and was only very fortunate in that I did no harm.

A large group of cases, much worse than these, may be made of those in which the operation gives little or no relief: all goes on after it as all did before, or everything becomes worse. Few cases can be more grave than these. You may think yourselves happy if, from twenty such cases, you can save one.

The failure of relief from the operation may be due to the utter exhaustion of the patient. I have had to operate on patients already dying. I could not refuse to operate, for I could not be certain that it would be useless; but it proved useless, and seemed mischievous.

The intestine was returned, and all put right; but the patient was too exhausted, as one may say, to be conscious of relief, and went on dying, although carefully fed and nursed.

Or the failure of relief may be because the strangulation remains—a constricting band or misplacement of the intestine, or some such thing, having been overlooked. In such a case, especially if you have not opened the sac, you must open the wound and the sac; enlarge the opening through the stricture; find, if you can, strangulated intestine or whatever may be wrong, and, if possible, set it right. You may be so fortunate as to succeed—more fortunate than I have been. But then, in two of my cases, an internal and distant strangulation coincided with that of the hernia. This was irremediable—could not be reached; and the second operation was as useless as the first.

But by far the most frequent cases in which the operation gives no relief, or only some slight and very brief relief, from the signs of strangulation, are those in which the intestine does not recover itself. It remains nipped, powerless, congested or inflamed, spoiled, and incapable of contraction; while the part of the canal above it becomes distended, and after a time powerless, the abdomen becoming constantly more tense, though it may be with less turbulence of the intestines. This condition is most frequent in the old, and after long strangulation; it is commonly attended with peritonitis; and no doubt the inflamed state of the muscular tissue of the intestine, both in and above the strangulated part, is often the cause of the loss of muscular power, or a serious hindrance to its recovery.[1] But peritonitis is not a necessary part of the calamity. I believe I have had cases in which no peritonitis existed beyond the strangulated part. In such cases as these, you may find the best hope, though the best is seldom good, in opium, food, and wine, all of which you must give by the rectum if the stomach will not retain them. Your object must be simply to keep the patient alive while, in time, the intestinal canal being at rest may regain power. Very small quantities of food may suffice for this—a few spoonfuls by the mouth every hour or two; and, twice or three times a day, injections into the rectum of milk, beef-tea, egg, wine, and laudanum, mixed all together.

Very similar to these cases are those in which peritonitis, having begun before the operation, is not relieved by it. There is, plainly, no reason why the relief of strangulation should at once remedy the peritonitis which the strangulation produced; and it sometimes seems to continue quite unaffected. Indeed, you had better expect that this will be so, and follow what is a very good general rule—that, namely, of giving opium directly after the operation in all bad cases of strangulated hernia, unless there be some clear reason for not giving it. I have seen no harm come from this plan, and I think it has sometimes done real good. What are the bad cases I have already told you? In any or all of them, you may give a grain of opium, or an equivalent subcutaneous injection of morphia, directly after the operation; and then watch and determine whether to give more, or what else to do.[2] Especially,

[1] Note XIX.

[2] Note XX.

you may expect to have to give wine very soon after the operation, for the patients are generally feeble.

Thus, then, you may have in mind four sets of cases in which the operation for strangulated hernia, though, to all appearance, well done, does no good at all, or too little to be counted. It may be so in patients utterly exhausted; in cases of persistent strangulation at the hernia or elsewhere; of intestine rendered powerless; of continuous peritonitis. Of all these I have seen examples. There may be others which I have not seen or have overlooked. From all of these you may distinguish in thought, and generally in fact and practice, those sets of cases in which untoward events arise after a clear interval of relief from the operation. All may go on well, or at least not badly, for a time; the patient may have a clear sense of relief; and the sickness and other bad symptoms may cease for hours or some few days; and then come trouble and disappointment.

The cases that may be thus grouped are many and various. I find among my notes instances of acute inflammation of the hernial sac and its coverings; simple acute peritonitis, such as might be called traumatic; asthenic peritonitis, probably of erysipelatous nature; acute peritonitis, with rapid collapse, from intestinal perforation or rupture; simple inaction or paralysis of intestine. And to those which were peculiar to operations for hernia may be added other calamities, such as might occur after any operation, as diffuse cellulitis, erysipelas, phlebitis, and others.

It is not possible to speak of all these things now—

hardly even appropriate; for, though those in the first list are associated with hernia, they are not peculiar to it, and their pathology and treatment must be studied on a broader field. The peritonitis must be dealt with according to the same rules as that which has nothing to do with hernia, using great care to determine which of the forms I have enumerated is in each case present. The strangulation may itself cause peritonitis; and this, as I have said, beginning before the operation, may continue after it. The wounding and exposure of the peritoneum may excite its inflammation, or greatly aggravate that which existed before the operation. In both these sets of cases, the signs of peritonitis will be observable directly after the operation, or, at the furthest, within twelve hours after it; and these will generally be cases of acute, or, so far as the constitution of the patient will allow, of sthenic inflammation. But you may generally distinguish from these the cases in which peritonitis sets-in after a longer interval, and in which it is rather of an asthenic type, whether it come from giving-way of the intestine, or from such conditions as would produce erysipelas after external injuries.

Do not suppose me to pretend that, in every case of peritonitis after hernia, you can easily determine to which of these different types of inflammation it belongs. You can determine often; you should try to do so always; for according to the type of inflammation must be your treatment. In the sthenic inflammations, you may give great comfort and help to recovery by free local bleeding with leeches, by large poultices over the abdomen, by weak saline and alkaline drinks, by the plainest and least stimulating diet. In the asthenic, opium is the only remedy that is generally useful. It used to be calomel and opium; but I believe the calomel did harm oftener than good. And with the opium must be rest and warmth, and liquid nutriment and diluted wine. And I can state no more general rules than these; for the rest of the treatment must be determined separately for each case.

Now, besides these very serious evils that may follow operations for hernia, some local troubles may ensue, of which a few are worth telling you of.

Perhaps the most common is acute inflammation of the hernial sac, alone or with the immediately adjacent part of the peritoneum. It is, I think, most likely to happen after operations for large herniæ in old people, when considerable force or time has been used in the reduction. You may know it best by the localised pain and tenderness with acute fever, without the signs of unrelief or of general peritonitis of which I lately spoke. There is no severe illness, but the general condition appropriate to a sharp local traumatic inflammation; and you may treat it, in this view, with complete rest and warm moist coverings of the part, and very little food; and, in the acute cases in robust people, with copious leeching. In the acutest case which I have seen, I applied ninety-eight leeches in three days after the operation, with great comfort, and I think great advantage, to the patient. That was twenty years ago; but it would still be right to do the same.

Another local trouble is acute inflammation of the cellular tissue outside the sac. It is chiefly seen after operations for scrotal hernia and for deep-seated femoral hernia. Commonly, the case appears going on well for a few days, and then comes a blaze of inflammation in and beneath the skin, leading sometimes to abscess, sometimes to diffuse suppuration. There is in these cases nothing peculiar to hernia. The same troubles may, as you know, follow any other operation; and they always need the same general means of treatment. I have never seen serious evil ensue in any case of the kind.

I might tell of other hindrances to recovery from the operation for hernia; but I limit myself to those of inflammation of the testicle, of sloughing of the scrotum, and others which I have been able to study practically, and I pass the others by, as I have done many other things, especially the complications of herniæ with various local diseases, such as hydrocele, varicocele, undescended testicle, and others. I have seen only one or two cases of each, and can tell nothing which is not already well told about them. Indeed, for a conclusion, I must say that, though to some of you it may have seemed excessive to give four lectures on strangulated hernia, I have treated the subject very superficially, very incompletely. One lifetime is not nearly enough for its complete personal study, in even so large a field as this hospital supplies.

CHRONIC PYÆMIA.

Chronic Pyæmia is seldom spoken of, and in many of the best systems of medicine and of surgery is not so much as referred to. Yet cases to which the name is appropriate are not very rare. Such cases resemble the well-described and typical pyæmia in the formation of widely dispersed shapeless collections of pus or other allied inflammatory matter; in the probability that these formations are due to some infection of the blood by the entrance of morbid emboli or inflammatory products; and often in the occurrence of rigors and profuse sweatings, of phlebitis, and inflammations of joints. But they differ from the acute type in that their course extends, continuously or with relapses, over many weeks or months, or even over years, and is often free, at least in its later stages, from all severe general disturbance of the health, and from nearly all risk of life.

A record of some of these cases may promote a more general knowledge and a better study of the disease; a study which is much to be desired for the avoidance of the errors apt to arise, in this as in other cases, from a too exclusive consideration of what we regard, perhaps wrongly, as types of diseases.

The intimate relation of acute and chronic pyæmia may occasionally be seen in cases which, after presenting or a time all the characters of the acute form, assume a very slowly fatal course. Of these I need not give any detailed examples. It may be generally said of them hat, after presenting the ordinary signs of acute pyæmia, he disease continues week after week steadily destroyng the health. Its course is indicated by slow wasting, all the tissues becoming dry and shrivelled; by increasing pallor; by decreasing muscular and mental power, the voice becoming weak, the mind slow and dull, and at night often wandering; by quickness and feebleness of pulse and breathing; by frequent and sometimes profuse sweatings, especially when there is much suppuration; by less frequent chills or rigors; by increased thirst and usually aversion from food; by dryness and shrinking of granulations. I do not pretend that the general signs of pyæmia can in every case of this kind be distinguished from those of hectic or of mere exhaustion; yet commonly they are distinct enough, and the distinction becomes very nearly certain when, as it often happens, there appear occasional patches of redness on the skin, or abscesses with flaccid walls, or œdema of a foot or hand, or indications of pneumonia.

It is not, however, of cases such as these that I wish to speak. I refer to them only to make more evident the relationship between acute pyæmia and those instances which differ from it, not only in their slow progress, but in their comparatively mild general symptoms. To these the name of chronic pyæmia is especially appropriate.

I. *Ligature of subclavian artery—Pyœmia on the 18th day—Pyœmial arthritis, lobular pneumonia, and pustular eruption—Secondary hœmorrhages—Death on the 65th day.*

In June 1860 I tied the right subclavian artery of a man, 54 years old, who had a large axillary aneurism. He had fair general health, but in textures appeared older than his age. All went on well, except that his pulse, for some few days, had gradually increased in frequency, till on the 18th morning after the operation, he had a very severe rigor, followed by heat, and then by profuse sweating. On the next (19th) day he felt shaken, and rather feeble; and he complained of pain like rheumatism in his left shoulder; but his pulse was slower, and except for some recurrent sweatings, he had no general signs of pyæmia or other severe illness. On the 20th day the ligature was cast-off; and on the 21st he felt and appeared as well as before the rigor, and might have been thought convalescent. He had taken large doses of quinine and good food and wine. On the 22nd day a profuse sweating occurred, and the pulse rose; and on the 24th a very severe pain ensued in the right elbow, and, lasting for two hours, was followed by great exhaustion and sweating, and increased rate of pulse and breathing. On this day, also, there was an increased discharge of pus from the wound, apparently from suppuration in or about the aneurismal sac.

During the next ten days (to the 34th) the patient appeared to lose flesh rather quickly. He often suffered severely with pain in the left shoulder and right elbow; nearly the whole of the right upper arm became very large with œdema and appearances of suppuration pointing at the elbow; he slept little, had profuse sweats, frequent chills, and no appetite; his pulse became weaker and was seldom under 100; his breathing less full, and generally 30 in the minute. Pus was freely discharged and welled-up through a small opening which alone remained unhealed at the wound. Full quantities of stimulants and all the food that could be taken seemed to produce no effect. But in the next week (35th to the 41st day) a marked improvement in the general symptoms took place. The patient every day called himself 'better,' or 'quite well'; he slept well, and rarely sweated; his pulse ranged from 96 to 108, and was always soft and moderately full, his breathing became daily slower, his tongue was always clean, his appetite pretty good; his bowels regular; and he sat up in bed for a short time every day. The œdema of the arm and the suppuration about the sac appeared stationary; but there was neither pain nor rigor.

On the 41st day, the pulse, without evident reason, rose to 120 or more; and on the 42nd secondary hæmorrhage, to the amount of a pint, ensued through the opening at the wound. In the next three weeks, to the 61st day, bleeding to a few ounces occurred twice. The suppuration in the upper arm was profuse, with discharge at the elbow, and after a time at the axilla through an opening spontaneously formed. (After the formation of this opening the operation wound healed in two days.) The patient became constantly thinner and weaker; yet he often said that, but for his local ailments, he should feel quite well; and indeed he had no signs of general illness more than anyone would have with losses of blood and profuse suppuration. Yet twice, during these weeks, he had thinly scattered pustular pyæmial eruption on the trunk and limbs, and for some days near the end of the time had quick breathing and cough connected, most probably, with pyæmial pneumonia.

On the 63rd day severe hæmorrhage again occurred, and then a sharp rigor, followed by heat and sweating. Again all these were twice repeated on the 65th day, and then he died.

At the examination after death (in addition to the disease connected with the aneurism, which it is unnecessary to describe here), some purulent deposits were found in firm circumscribed spots in the upper lobe of the right lung; the left shoulder-joint was full of pus, and the cartilage of the humerus was thin, soft, and partially detached; and in the right elbow-joint all the articular cartilages were removed, and the ends of the bones were rough with superficial ulceration. The lower fourth of the right humerus was bare and surrounded with pus.

II. *Lithotomy—Rigors on the following day—Repeated suppurations in the sterno-clavicular region—Rigors and epileptiform convulsions—Suppuration in the prostate—Phlebitis—Recovery.*

In July 1859, I performed lateral lithotomy on a gentleman 34 years old, a patient of Mr. Hewer. He was of naturally robust health, but now worn-down by suffering and by residence in China. The stone was large and soft. The operation had in it nothing worth describing; but in the course of the day after it the patient had three sharp rigors, after as many times of passing urine through the urethra. During the next day he began to complain of pain, like that of rheumatism, about his left shoulder and clavicle. This continued and increased, and was soon attended with increasing swelling and, at the end of the first week after the operation, issued in the formation of a large deep abscess over the lower left cervical and subclavian region, which abscess was opened. During the same week the pulse was seldom under 120; and frequent profuse sweatings occurred; but with these exceptions there was nothing materially different from an ordinary favourable progress after lithotomy.

In the second week recovery continued, and at its end the patient was able to leave his bed and walk to his sofa every day; his urine passed freely through the urethra; and 'he had not a bad symptom.' But he was annoyed with 'prickly heat,' such as he had often had in China, and with the continued suppuration about the clavicle, for which two more punctures were necessary, and with which some sloughing of the subcutaneous tissue was now connected.

Sixteen days after the operation, after a rather restless night, but with no other warning, he had a rigor of the greatest severity; then a long hot stage, and then profuse sweating, which lasted through the day. They were like those of very bad ague; and he had had ague ten years before. Large doses of quinine were ordered.

Soon after the rigor, a part of the swelling near the front of the neck, which had been much raised and boggy, as if there were sloughs under it, almost completely subsided; yet there was no increased external discharge of pus. During the night, there was profuse sweating; but on the next and following days, to the 25th, the patient's condition returned to what it had been before the rigor, except that he sweated more and had a slower pulse. The only apparent consequence of the rigor was the formation of an abscess over the upper piece of the sternum and the adjacent costal cartilages, which was let out on the 23rd day. With this exception, he appeared convalescent.

But on the 25th morning, after much distress in the bladder and rectum during great part of the night, the patient had an epileptiform seizure which lasted an hour, and was followed by great rapidity of pulse and profuse sweating. Before this 'fit' the parts about the abscess over the sternum were observed to be puffed-up and swollen; after it, they had quite subsided, though without any visible discharge of pus. In connection with this 'fit,' which, in all its relations, appeared to be the equivalent of a rigor, a large abscess formed in the left lobe of the prostate, But the general health of the patient suffered no other disturbance than would have been produced by an ordinary abscess in the same part; and when the pus was discharged, by puncture through the healed lithotomy-wound, he was at once relieved from all trouble, general as well as local.

Thirty-six days after the operation, when the patient's health was so far restored that he was daily walking or riding out, he was suddenly seized with severe cramp-like pain in the legs, the first symptom, as it appeared, of phlebitis of the posterior saphenous veins, which, in succession, became hard and tender at and below their junction with the popliteal. He was for many days troubled with the lameness and œdema thus caused, but when these were remedied, his recovery seemed complete,

except in that the prostate-abscess led to the formation of a small fistulous communication between the bladder and rectum, which only slowly closed. He had good health afterwards so long as I knew him.

In both of these cases, condensed from full reports, the general characters of pyæmia are clearly marked: yet they differed widely from the acute type in respect of both time and intensity.

A 'typhoid' state is commonly referred to as most characteristic of the general condition of a patient with pyæmia.[1] Certainly nothing 'typhoid' was observable in either of these patients. Both of them, for many days together, appeared and felt as if they were convalescent, even while, as we may believe, the mischief of pyæmia was at work in them.

It may be observed, too, that in both these cases the healing of the operation-wounds was unaffected by the pyæmia. The same fact may be commonly noticed in chronic pyæmia; and even the healing of one pyæmial abscess while another is forming, and while the patient is being gradually exhausted, is not rare; but in these cases the healing of the wound is rather by contraction and drying than by the organisation of new tissue.

Some of the cases of chronic pyæmia longest in duration that I have yet seen, occurred in connection with acute necrosis (so-called)—*i.e.* necrosis apparently due to acute diffuse suppuration between a bone and its periosteum. The frequency of death from acute pyæmia in this disease is well known; yet I think there are no cases of pyæmia in which death is more often escaped. Neither are there any among which better evidence may be found that the presence of pus is not essential, as the starting-point, for what we assume to be a pyæmial infection of the blood.

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[1] I should not myself so speak of it. Among even the worst cases of pyæmia under my own care, both in the hospital and in private, many, and I think the majority, of the patients have either never been 'typhoid,' or have been so for but a short time, and then have passed into the fatally exhausting form of the disease described at p. 161.

III. *Acute necrosis of the left os calcis—Phlebitis—Abscesses—Acute inflammation of the right knee-joint—Necrosis of the left femur—Inflammation of the elbow and hip-joints—Symptoms extending over three years.*

In September 1859, I saw a lad, 11 years old, of healthy constitution and living in good circumstances. He was a patient of Mr. Sainsbury, to whom is due whatever credit may be given to medicine for an escape from pyæmia. In July 1858, he had had gastric or typhoid fever of great severity, attended with tympanites and a very painful state of several joints. But from this he had completely recovered. In May and June 1859, he had numerous boils; and on the 6th of July was almost suddenly attacked with a severe pain in his left heel and ancle. This was ascribed, with fair reason, to excessive exercises at cricket, and in gymnastics during which he hung on a rope by his heels for a long time.

On July 7th the pain was less; but at night it became worse, and he put his feet into cold water to relieve it. During this night he became delirious; and he continued so next day, with swelling and apparently great pain in the ancles, especially the left one.

On July 9th, Mr. Sainsbury found him with acute fever, delirium, abdominal distension, and general 'typhoid' symptoms. Next day the integuments below the left ancle-joint and heel began to slough; and, in some days following, the sloughing extended rapidly, opening the ancle-joint, or that of the os calcis and astragalus, or both, and leading to the necrosis of a large portion of the os calcis. For many days he appeared dying—typhoid and exhausted, with rapid wasting; but he gradually recovered. The large piece of the os calcis, with the attachment of the tendo Achillis, remained widely exposed; and a large portion of integument separated.

During this, the acutest part of his illness, occupying nearly two months, the patient had inflammation of the lymphatics or veins, or both, of the left limb; swellings seeming to threaten suppuration, but subsiding, on the arms; and an abscess on the front of the upper part of the right leg, which was opened and healed.

In the third month the right knee-joint became acutely inflamed, with severe pains, and quiverings and startings of the limb, indicative of ulceration of the cartilages and articular surfaces of the bones. This ended with contraction and firm ankylosis. In the months following, while the patient's general health was so far improved that he seemed to suffer with nothing but the feebleness of a very slow convalescence, there were repeated inflammatory swellings about the hip-joints, and on one side; but none of them suppurated: they subsided, some during the repeated application of tincture of iodine, some while using cold compresses. Month after month thus passed, and in the summer of 1860, the abscess by the right knee formed again and re-opened, and necrosis of the left femur occurred, with repeated openings of sinuses and separations of sequestra.

In November of the same year, a very acute inflammatory attack occurred at the right elbow-joint, threatening suppuration of the joint, and leading to contraction and partial stiffness.

In February 1861, the greater part of the dead portion of the os calcis, the seat of the first necrosis, separated; and thenceforward healing went on, and was in the course of the year completed. The greater part of this year passed without any recurrence of active disease; and the patient, crippled in the left foot, right knee and thigh, and right elbow, recovered better health and strength than he had had since his illness began. But in November 1861, another acute attack of inflam-

mation of the right elbow-joint occurred. It began, as all of the same kind did, without any apparent cause, suddenly, in the night, with severe pain, which continued many days; it was attended with great heat and swelling, and with redness and œdema of the integuments, and was followed by almost complete stiffness of the joint. In March 1862, there ensued an equally acute inflammation of one hip-joint, just like an ordinary acute 'morbus coxæ'; but this also, treated like that at the elbow, with leeches and cold compresses and rest subsided, and left only partial stiffness. In the summer of 1862, the right leg suffered for a month with erysipelas, and a large abscess formed in the left thigh; and in November of the same year, the right elbow-joint was for the third time the seat of acute inflammation. From this time onward health was gradually without interruption completely recovered, and with complete action of the joints with the exception of the left ancle and the right knee.

Strangely unlike as this case may seem to the ordinary cases of pyæmia—running their fatal course in a week or two, or, as it is said, 'occasionally' prolonged to seven or eight weeks—it is yet evident that the unlikeness is almost only in respect of time. If the events of this case had all occurred in three months, instead of three years, it would have been an ordinary case of pyæmia ending well. But difference of duration is never alone sufficient to indicate a difference in nature, or to justify a difference of substantive-name, among diseases. However prolonged, this and the like cases are still pyæmia, chronic or relapsing.

The absence of nearly all respect to time is, indeed, one of the many characters in which pyæmia differs from the most marked specific diseases; and this corresponds with the absence of specific shape in the pyæmial deposits, abscesses, and necroses; with the common characters of pyæmial pus and other products of inflammation; with the absence of all indication of a single constant infecting material; and with the transmutability (as it seems) of pyæmia with erysipelas, cellular inflammation, and puerperal fever.

It may be a question whether, in such a case as that last related, there was any abiding disease of the blood or tissues in the intervals between the successive outward evidences of pyæmia. We can judge, in such a question, only by the analogy of other relapsing diseases—*e.g.* of secondary syphilis; and from this we may believe that, during the whole period of liability to outbreaks, there is continuous, though not stationary, disease.

In some of the cases of chronic pyæmia connected with acute necrosis, the secondary affections are limited to the bones, or greatly predominate in them. A girl, 11 years old, who was under the care of Mr. Roden, of Droitwich, had acute necrosis of the lower part of the right tibia and, almost coincidently, of a piece of the left clavicle. Some months afterwards, she had necrosis of a small portion of the left humerus, with considerable suppuration around it; and several months later, a deep abscess, but not attended with necrosis, above the right knee. In another similar case, a young patient had, during four years, a succession of attacks of necrosis of different bones; all acute, none bearing any resemblance to strumous disease.

This election of a single tissue, and the observance of an uniform method of disease in the secondary affections, are characteristic of chronic rather than of acute pyæmia. They are very marked in some of the cases that follow parturition, in which women suffer for many weeks or even years with a succession of abscesses in the subcutaneous connective tissue of the limbs, and usually (after long suffering) recover completely. Among such cases, I have lately (1878) seen, with Mr. Derry Jones, a lady, forty-one years old, who, nine years ago, after parturition with her seventh child, had abscess of the right breast, and nearly died with what was regarded as pyæmia. After this she had a long series of subcutaneous abscesses; and she has had similar abscesses again and again, and has them now on shoulder, leg and foot. But during the nine years since the primary pyæmia she has had three children, and during pregnancy and lactation she has never had an abscess. The abscesses that now form begin with pain in some 'chance' spot, then a circumscribed hardness appears, which rapidly softens with suppuration and opens and slowly heals. The openings never ulcerate widely, and no abscesses have formed except in subcutaneous connective tissues.

Among the least severe cases of pyæmia,—contrasting with the acute cases as strongly in respect of gravity as the last related do in respect of time,—are some of those associated with disease of the urinary organs or with catheterism.

IV. *Urethral stricture—Retention—Catheterism—Rigors—Pyæmial abscesses—Tumour-like formation about the femur—Liquor potassæ—Recovery.*

A sallow unhealthy-looking man, 40 years old, was admitted into St. Bartholomew's on January 27th, 1863, with old strictures and recent retention of urine. The usual treatment was pursued, with the warm bath and opium, and afterwards with catheterism. He was completely relieved, and taught the use of the catheter; and was discharged, apparently in his usual health, on February 10th. Just before he left the hospital, a No. 8 catheter was passed easily.

On the night of February 11th, about thirty-six hours after his discharge, without any reason that he could assign, he had violent rigors and great pain, like that of rheumatism, in his right shoulder. On the 12th he had some hæmorrhage from the urethra, and about the same time noticed a painless swelling on the right of the upper half of the sternum, and soon after another swelling under the urethra, just in front of the scrotum. With these, and complaining of dyspnœa and pain in the chest, he was again admitted into the Hospital on February 14. Soon after his admission, a third swelling was found, seated over the left olecranon. All these swellings were or became abscesses; that over the sternum was open on the 14th; that by the urethra burst into the canal on the 18th, and that over the olecranon was opened on the 19th; and (to end their history), they all healed within the following month.

Two days after his admission, the patient's general condition was only such as might be found in anyone with abscess from ordinary causes. He had been rather more ill on admission, but, as it seemed, only from distress added to the irritation of the forming abscesses. After two days' rest, he had a cool, moist skin; his tongue was but little furred on the middle; his pulse 108, full and soft; breathing 20; his bowels acted daily, he passed healthy urine freely, and, except that he slept little and was feeble, he could hardly have been thought ill.

Near the beginning of March, the patient observed a swelling on the outer and front part of his left thigh. This gradually increased, and at the middle of April covered at least three-fifths of the front and outer part of the femur, to which it felt as if immoveably fixed. The swelling was oval, smooth, not perfectly defined, firm, and apparently solid, or as if a solid infiltrated with fluid. The integuments and all the adjacent structures appeared healthy, and very little pain was produced by even rough handling. A small puncture let out a little bloody serum. The general condition of the swelling appeared to be that of a deep-seated inflammatory infiltration of all the tissues round the bone—but some thought it a firm tumour growing from the bone; the more readily because the patient's health seemed undisturbed. He went out daily, and was in every respect convalescent.

By the middle of April, the swelling had gained its greatest size, increasing the circumference of the limb by two inches. The patient was now ordered to take a drachm of liquor potassæ three times a day, and to make no change whatever in his manner of life, or any of the conditions in which he was placed. Very shortly the swelling began to decrease, and with no other evident change than that of diminishing size it gradually disappeared, and by the end of May was gone. Soon after, the patient left the hospital apparently well, and he showed himself a month later in the same condition.

V. *Lithotrity—Acute general disturbance—Abscess in the fore-arm, and threatened abscess in the thigh.*

A gentleman, 40 years old, invalid with the consequences of an empyema of many years' duration, had a calculus of lithic acid, which was to be removed by lithotrity. The first crushing was on January 4th, and was followed by no general disturbance. The second, on January 10th, was followed on the next day by a greatly increased rapidity of pulse,—it rose from near 90 to 140,—by rapid breathing, redness and dryness of the tongue, impaired appetite and digestion, frequent vomiting, heat and wetness of the skin. These symptoms continued for five days, with little variation, and then gradually subsided. During and after their continuance, the urine contained more than usual mucus; but the irritability of the bladder was not increased. A third crushing was done on January 16th, and a fourth, the final one, on January 22nd.

While the patient was suffering with the severe constitutional disturbance above described, he began to complain of pain in the left fore-arm, and in the front and upper part of the left thigh. In the former there slowly appeared a widely-diffused œdematous swelling, tense and painful, which, with gradual concentration about the middle of the ulnar aspect of the fore-arm, ended in a large abscess in the deep subcutaneous tissue. This was opened on January 27th, and, after freely discharging thick pus, and several times apparently healing and then re-opening, finally closed on March 23rd. The pain in the thigh was succeeded by a swelling, similar to that in the fore-arm, but much larger, extending from the great trochanter over all the front of the hip-joint, and far inwards and downwards. At the end of January, it appeared to have already suppurated; but the calculus having been all evacuated, and the patient seeming to be only extremely feeble, I advised him to leave London for his home in fresh air. There, with returning strength, the abscess in the fore-arm healed; the swelling in the thigh slowly disappeared without discharge, and the patient regained and long retained his usual health.

Still less severe in its general symptoms than either of these two, was the following case:—

VI. A young man was under my care in the Hospital in March and April 1862. He was admitted with spontaneous moderately acute inflammation of the right inguinal glands. A small puncture was made into the centre of the swelling; but it contained no pus. A few days later, acute œdematous inflammation of the scrotum set-in; while it was subsiding without suppuration, the internal saphena and some other veins of the left leg became nodular, hard and tender, with pains and heat, as in ordinary adhesive phlebitis; and, in a day or two, a similar affection appeared in the veins of the right leg. When these had nearly recovered, pains and swelling, much like those of acute rheumatism, ensued in one hand and elbow, and, after a few days, in the opposite wrist. After an interval of rather more than a week, and when the patient seemed nearly

completely well, a swelling appeared by the anterior spine of the right ilium, not far from the glands that had been inflamed. This suppurated, and discharged the only pus formed in the case. While it was discharging, the right spermatic cord became painful and hard. Then knotted hardness, pain, and tenderness ensued, in succession, in some of the subcutaneous veins of the left fore-arm, left upper-arm, and right fore-arm.

With these the case ended, and, after two months' illness, the man regained his usual health and strength. During the whole time he had no more or other general disturbance of his health than is usual in each of the inflammatory diseases from which, in unusual succession, he suffered. In the intervals between them he was weak, but not ill.

Still less severe are the cases, not very rarely seen, in which after ligature of hemorrhoids or some minor operation, abscess forms in some distant part, not preceded by serious general disturbance and not followed by any other malady.

If it should seem to some that cases so comparatively trivial as these cannot properly be called by the same name as those from which the ordinary description of pyæmia is drawn,[1] I would observe that the difference between the two groups of cases is only one of degree; and that a complete series of cases might be collected ranging from the most to the least severe, and all resembling one another more than any of them resemble the cases of any other disease. The differences between the cases of acute and of chronic pyæmia are not greater than those between cases of acute and chronic tuberculosis, or acute and chronic gout. Sameness of designation is, in both cases alike, justified by the rule that differences in degree do not constitute or prove difference in kind.

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[1] See discussion on Mr. Hewett's paper.—*Clin. Soc. Trans.* vol. vii., pp. lxviii., lxxi.

The conclusions which the cases just related go to prove may be thus summed up:—

It is not rare to meet with examples of disease presenting the essential characters of pyæmia but much slower in progress, and much less severe and perilous, than those from which pyæmia is usually described.

These cases are frequent enough to justify the general use of the names 'chronic' or 'relapsing' pyæmia.

They are more rare among the instances of pyæmia following wounds than among those occurring in diseases.

The local evidences of chronic, more often than those of acute, pyæmia are seated exclusively or chiefly in different parts of the same tissues; they are more frequent in the trunk and limbs than in internal organs,[1] and when seated in the veins are most frequently found towards the close of the disease.[2]

The nearest affinities of chronic pyæmia are with rheumatism, through gonorrhœal or urethral rheumatism;[3] with simple or single abscess-formation after fever; with hectic fever; yet, with very rare exceptions, the diagnosis from all these is, in practice, clear.

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[1] Several instances in which pyæmia was chronic are related by Mr. Prescott Hewett in his address on pyæmia, published in the *Clin. Soc. Trans.* vol. vii. 1874. In many of these the abscesses which formed were confined to the limbs and the superficial parts of the trunk; and the lungs and other internal organs escaped.

[2] Chronic pyæmia, indicated by a succession of large, flaccid, often painless abscesses in the joints, or the subcutaneous or intermuscular tissue, or beneath the periosteum of the long bones, accompanied by wasting, sallow skin and wide variations of temperature, is occasionally seen in infancy and childhood. It occurs as a sequela of scarlet fever, or some of the other exanthemata. In some of the instances that have been observed no distinct cause could be assigned.—[ED].

[3] Mr. Barwell in his work on *Diseases of the Joints*, p. 101, maintains a similar opinion.—[ED.]

The prognosis in chronic pyæmia may, usually, be very favourable; especially when there are long intervals between the successive local manifestations of disease, and no evidence of serious pulmonary affection. The slower the pulse and breathing, and the less the sweating, the greater are, in general, the probabilities of recovery.

The usual treatment of chronic pyæmia may be with good food, patient nursing, a moderate use of stimulants and tonics, and an abundance of fresh air. The value of this last condition was strikingly shown in Case V. The influence of the liquor potassæ in Case IV. deserves consideration. Its curative power seemed clearly proved; and I suspect that a part of its reputation for causing the absorption of tumours is due to its influence on morbid deposits imitating tumours, such as existed in that case.

NERVOUS MIMICRY.

LECTURE I.

A GROUP of cases of great practical importance is distinguished by this fact: that a nervous disorder produces an imitation or mimicry of organic local disease. In some of these cases the mimicry occurs without any substantial disease whatever; in others it gives features of extreme severity to a disease which, in a normal condition of the nervous system, would be trivial or unfelt.

Much has been written on this subject—much that is good; but, if I may judge from the difficulties still often found in discriminating between the real and the mimic in diseases, there is need of writing more.

Cases of this kind are commonly included under the name Hysteria; but in many of them none of the distinctive signs of hysteria are ever observed, and from all of them it is desirable that this name should be abolished. For it is absurdly derived and, being often used as a term of reproach, is worse than absurd. To call a patient hysterical is taken by many people as meaning that she is silly, or shamming, or could get well if she pleased; and no doubt there are patients of whom some of these things may fairly be said; but in many more, hysteria, specially in the form of an unwilling imitation of organic lisease, is a serious affection, making life useless and nhappy and not rarely shortening it.

At any rate, let us, if we can, discard the name of hysteria from surgery. If it is to be retained at all, it may be for the cases of patients with hysterical convulsions and sense of suffocation, with the abdominal flatuence, the nervous urinary secretion, and those other ssociated signs of nervous disorder which are not imitaons of other diseases, and are not themselves imitated. hese are characteristic enough to deserve a distinct ime, and hysteria will serve, at least as well as hypoondriasis and melancholy do for what they signify. ut the characters of nervous mimicry are also distinct nough to make a separate group with another name. n English we may speak of nervous mimicry; in unranslated Greek, of neuromimesis. To patients and their riends the maladies may be said to be due to extreme ervous sensibility; or, if they also prefer Greek, we may all them hyperæsthetic or hyperneurotic;—anything but hysterical.[1]

The chief practical interest of these cases is in the diagnosis between them and the organic diseases imitated in them; and as it is only in clinical study, and on clinical grounds, that they can be grouped, so I shall keep to a clinical view of them, and shall speak of their pathology only as subservient to their diagnosis. I am the more content to do this because, in Dr. Russell Reynolds's essay on Hysteria in his *System of Medicine*, and in Dr.

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[1] Hysteria may be fitly called *Mimosa* from its counterfeiting so many diseases, even death itself. Coleridge, *Table-Talk*, 1852, p. 81.

Anstie's lectures on it in the *Lancet*, you may easily find the whole subject recently and accurately taught. Indeed, if it were not that I may treat the surgical part of the subject more fully than they, I should not have seen room or occasion to lecture on it at all.

Now, there is scarcely a local organic disease of invisible structures which may not be mimicked by nervous disorder. You hear of hysteric cough and hysteric aphonia, of hysteric dyspepsia and paralysis, of hysteric joints and spines; and there is scarcely any of these disorders in which the mimicry of real diseases is not, sometimes, so close as to make the diagnosis very difficult.

The means for diagnosis are to be sought—(1) in what may be regarded as the predisposition—the general condition of the nervous system on which, as on a predisposing constitution, the nervous mimicry of disease is founded; (2) in the events by which, as by exciting causes, the mimicry may be evoked or localised; (3) in the local symptoms of each case. And I shall speak of these things in this order; though it is the wrong order for the actual study of a case. In every clinical study, the examination of the present disease should precede that of its probable causes; though for lectures and reading the reverse order is usually the better.

First, then, as to the general condition of the nervous system which disposes to mimicry of local disease. In all well-marked instances there is some prominence and apparent excess of nervous action, leading to the general expression of the patient's being nervous or of nervous constitution. Neuromimesis cannot be found in all persons alike, or in any person at all times. It may be regarded as a localised manifestation of a certain contitution; localised, that is, in the same meaning as we have when we speak of the local manifestation of gout or of syphilis, or of any other morbid constitution which we regard as something general or diffused, though distinct witness of it may be in only one or more parts. And the nervous constitution, like others, is inherited in different degrees of completeness or intensity; and may, like others, become less or more complete or intense according to the conditions in which it has to live.

As to what is, verily, the peculiarity of the nervous constitution, I believe we have nothing fit to be called knowledge. It is even hard to give fit names to what we may suppose it to be. We may speak of the nervous centres as being too alert, or too highly charged with nerve-force; too swift in mutual influence; or too delicately adjusted, or defectively balanced. But expressions such as these, or others that I see used, may be misguiding. It is better for us to study the nervous constitution in clinical facts; and the life of almost any patient with very marked nervous mimicry will supply materials for the study. I have, indeed, seen a few in whom I could find no other nervous error than the present mimicry of some disease. But in the great majority there is either history or present evidence of a characteristic nervous constitution, such as may serve towards diagnosis. Some have been, or are even now, truly hysterical; subject to fits of irrepressible laughing, crying, or sobbing, or to convulsions of various hysteric kinds. But you will find nervous mimicry in very many who have never been hysterical. In some the sensibility is always too keen, whether for pain or pleasure. In these the pain of an injury is much more severe than what we may suppose to be the proper average of pain producible by such an injury: it lasts longer; outliving all the other consequences of the injury. And, as to pleasure, as a patient said to me, who suffered what she called tortures from ordinary sources of moderate pain, 'the pleasure of music is an agony.' But not all have this compensation of feeling pleasure as keen as pain: for many are habitually neuralgic; they suffer with headaches, dartings in limbs, still more often with spine-aches and the like, and are, as one may say, very painful persons,—altogether hyperneurotic in their relations to pain, but not to pleasure. In some of these patients, again, the mutual influences of the mind and body are too active. If they have ever fainted or vomited, for instance, the recollection of the circumstances in which they did so makes them faint or sick again. In some, all impressions are too widely and vehemently reflected; the irritant that healthy people bear unobserved produces convulsions, or some other seeming serious disturbance. An intestinal worm, for instance, which some patients would not feel, may in these produce the signs of all manner of diseases. And some have already had mimicries of various other organic diseases, and will tell of all the sensation-signs of these diseases, without having a single mark of any organic change produced by them.

One of the most frequent conditions in those in whom the nervous mimicries occur is a singular readiness to be painfully fatigued by slight exertion. This is most marked in those with spinal neuromimesis, but may be found in many more; and in some is the most marked sign of the erroneous state of the nervous system. To most of us the sense of fatigue produced by even excessive exercise is scarcely distressing: only a great excess, tending to exhaustion, would be felt as really painful; and the worst is soon relieved by rest. But these nervous patients become utterly fatigued in even slight exercise, and their limbs and their backs, though they may look muscular and strong, ache horribly and very long; so that, not rarely, the attempt at more than usual exercise is followed by great suffering, by sleepless nights, and sometimes by nausea and vomiting. Their sensations are like those of the painful fatigue which convalescents from acute disease feel after doing too much; but I believe there is never attendant fever such as convalescents in that case usually have; the likeness is only in sensation.

Some or all of these, and of other forms of defect, or error, or turbulence—call it what you will—of the nervous system, you will nearly always find or hear-of in patients with nervous mimicries; and in any study of a case these conditions or their absence may add to the grounds for diagnosis. But it is, I think, a fact of singular interest that, in even the most turbulent of these nervous systems, the disturbance very rarely takes the form in which morbid nervous influence produces, not mimic, but real organic changes. Of the things imitated ardly one is ever realised. I have not yet seen in any ysterical or neuromimetic patient an instance of herpes na; not even in those who have suffered long with that infra-mammary pain which is not far unlike the neuralgia commonly preceding the eruption. I have not seen an instance of rheumatoid stiffening of joints, like that which sometimes ensues in disease of the spinal marrow, even in the most tedious of neurotic joints; nor one of the glossy fingers, or the eczema, or the centripetal wastings, or, in short, any of the organic diseases of peripheral parts which are associated with injuries or organic diseases of nerves or nervous centres.[1] Neither are these patients especially liable to any forms of fever or of blood-poisoning; they incur as little risk from operations as any class of healthy persons. The fact—I think it is one—is important in both diagnosis and pathology; and it is not falsified, I believe, in any but a few ambiguous cases in which what seems a mimicry of disease of the spinal marrow passes into real disease, and leads to extreme wasting of the lower limbs and arrest of the growth of nails. The contrast is the more notable when we consider that the distribution of blood is, in many of the mimic cases, greatly affected. Heat and cold of the same part rapidly succeeding one another, flushing and pallor, turgidity and collapse,—all these are frequent, striking, and capricious in the nervous mimicries; but, after months and years of their occurrence, not one organic change may be discerned. You may find in our Hospital Reports[2] the case of a gentleman who consulted me because, for several years, whenever he walked far or fast, his feet became cold, white, and numb—'dead,' as they are called; and then, when he rested, they flushed red and hot and were turgid with blood, distending even the veins of the leg. Yet, after years of such disturbance, all the structures of his feet were as healthy as any of yours are. And I urge you to study carefully such cases. They are rare, but you are likely to meet with them, and when you watch them think of what may happen if such changes as you see in the skin, now looking bloodless and now overfilled with blood, can, on as little provocation, happen in the brain or spinal marrow, in the heart or in an ovary. What startling and yet what harmless disturbances they might produce! what mimicries of grave disease!

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[1] I have an impression that yellow and other pigment-marks at the sides of the forehead, under the eyes, and on the abdomen are significant of a neurotic constitution.

[2] Vol. viii. p. 67.

But now, to add again to the grounds of diagnosis: it is seldom that patients with well-marked nervous mimicries have ordinary minds—such minds as we may think average, level, and evenly balanced. You may, indeed, find among them some commonplace people, with dull, low-level minds; but, in the majority, there is something notable, good or bad, higher or lower than the average—something outstanding or sunken. This something is, in different cases, so various that it is impossible to classify or even to enumerate the diversities. But be clear that these patients are not all silly, or fraudulent. Nothing can be more mischievous than a belief that mimicry of organic disease is to be found only or chiefly in the silly, selfish girls among whom it is commonly supposed that hysteria is rife or an almost natural state. It would be safer for you to believe that you are likely to meet with it among the very good, the very wise, and the most accomplished women. But it will be safest if you believe only that, in any case of doubt whether a local disease be organic or nervous, it adds something to the probability of its being nervous if the patient has a very unusual mental character, especially if it be unusual in the predominance of its emotional part; so that under emotion, or with distracted attention, many things can be done or borne which, in the quieter mental state, are felt as if impossible or intolerable. And this probability of mimic rather than real disease will be much increased if the symptoms seemed to follow any great or prolonged mental tension, or if the patient's mind be set, in much more than the ordinary degree, upon the real or supposed disease. In all the well-marked cases of nervous mimicry, and in the less marked in only a less degree, the malady determines the general current of thought, and often of the whole life. Egotism has its keenest life at and about the supposed seat of disease. If the malady be not always uppermost in the thoughts, it seems always in an undercurrent, rising at every interval between the distractions of work or play.

This influence of the mind on the pain and other characters of mimic disease can hardly be over-estimated. It is very erroneous when the patients are charged with imagining or inventing their sufferings. Their only fault, if it may be so called, is that they attend to them too much. Attention makes all pain sharper; without it there would be little or none; and attention long exercised becomes keener, more direct and definite; and so the perception of pain becomes more intense. And, then, if the attention be fatigued or averted, it is constantly apt to be recalled by mental associations. These, very commonly, are the causes of relapses of nervous mimicries.

nd so are anxieties and fears; as in the common cases f young persons whose mimicries are renewed or become mphatic in the anticipation of marriage.

The contrast of the mental states of those who have eal and those who have imitated local diseases is often ery striking and of great help in diagnosis. Few patients ith real hip-disease or real spinal disease, for instance, hink half so much about their ailments as they do whose nervous systems imitate those diseases. In this egotism they resemble hypochondriacs; yet commonly with a great mental difference, in that those with neuromimesis are not distressed with constant forebodings of greater mischief; they do not suspect that everything they feel is a token of something much worse than can be felt; rather, they are content and often almost happy in their afflictions. While the hypochondriacs are in a panic on account of some trivial aching, the neuromimetics will talk of their agonies with calm or smiling faces, or with half-closed quivering eyelids; some seem proud in the immensity of their ailments; in some, there seems an unbounded capacity for the enjoyment of suffering.

This egotism in relation to the imitated diseases gives to many patients an appearance of great wilfulness. Some, indeed, are very strong-willed; some are so for all the good designs in which they engage, and some with a thorough, almost diagnostic self-service. But strong will is, I think, less common among these patients than is a want of will. Sometimes there is a general feebleness of will: the patients can do nothing for themselves; can rust themselves in nothing; but commit themselves to ome one with a stronger will and an appearance, if not a reality, of more knowledge. Hence, among these patients are the most numerous subjects of mesmerism, spiritualism, and the other supposed forces of which the chief evidence is the power of a strong will over a weak one. But more often you will find a feebleness or complete negation of will in reference to the supposed seat of disease, while towards other things the will is strong enough. You may find the strangest inconsistencies in this respect. A man who has intellect and will enough to manage a great business, or to travel with much inconvenience and write clever books, cannot will to endure sitting upright for ten minutes, or cannot distract his attention enough to be indifferent to an unmeaning ache in his back. A girl who has will enough in other things to rule the house has yet not will enough in regard to her limbs to walk a step with them, though they are as muscular as ever in her life. She says, as all such patients do, 'I cannot'; it looks like 'I will not'; but it is 'I cannot will.'

I think it is to this same weakness of will that we may attribute other things often observed in the worst cases of neuromimesis, especially the disposition of the patients to imitate or assume symptoms of disease that they have seen or heard of, such as the deformities of diseased joints, the lameness or paralysis associated with spine-disease, and the supposed distinctive pains of cancer. No doubt there is sometimes intentional fraud and lying in these cases; but in many more I think you may be sure that patients do not study the imitation or deliberately determine to practise it. Rather they are, in respect of will, like children, who almost involuntarily imitate diseases; for instance in stammering, limping, and so on. I think that many persons, even such as have good nervous systems, must be conscious that it requires effort—that is, a full exercise of will—to avoid these imitations, and to disbelieve or disregard sensations imitative of those endured by others. And in the frauds which some of these patients practise I am nearly sure that the fault is rather in weakness of the will than in its perverse strength. As other people cannot resist thieving or drinking, so these cannot resist, have not will enough to resist, the inducement to fraudulently exaggerate their symptoms, or even to invent some. It is often very hard to distinguish between the frauds of the wilful and those of the will-less; but I have seen no reason to believe that wilful fraud in disease is much more common among those with nervous mimicry or hysteria than it is among others.

If you study nervous mimicry in all the varieties of mental strangeness that may be associated with it, it may often seem to you an entirely mental disorder, due only to imagination, or to intense attention directed on one place, or to adoption of signs heard of, or, in many cases, to an insanity of the intellect; and it is not easy to find sufficient evidence that it is not so. Imagination, fear, and keen attention, association, and the tendency to imitate distresses seen or heard of, might produce all the morbid sensations of which patients tell, and might give form and intensity to pains from any casual source of real disease; and as for the postures observed, for instance, in mimicries of diseased joints or spines, these, it may be said, are only such as are assumed instinctively for the relief of pain; and in an intensely sensitive person, with no substantial reason for more than a slight pain, it is probable that the subjective intensity of pain would bring about the same postures of relief. Similarly, flushings and transient heats might be all of mental origin, as blushing is. If you study these mimicries from the mental side, you may, I say, easily find reasons for thinking them mere mental errors—insanities—rather than erroneous workings of sensitive and motor nerve-centres; and you will be almost convinced of this view of the case if you will read of the multiform and profound influences of the mind over the body in Dr. Tuke's recent book[1] on this subject, or in any similar work. But I think I may assure you, that to regard all mimicries of organic diseases as essentially mental errors would be bad pathology and worse practice. Let me put the case before you very briefly, for I am lecturing on diagnosis, not on pathology.

Some mimicries are essentially mental; such, for instance, as those in which patients, out of mere fear and keen attention, acquire the pains of cancer, and localise them in healthy parts; and in nearly all mimicries a mental influence may be discerned, just as it may in nearly all real diseases in which consciousness remains —an influence often impossible to separate or weigh, generally increasing with the duration of the disease, yet not essential to it whether it be real or mimic. But in some mimicries it is hard to discern any mental influence at all. Some are imitations of diseases very far from mental associations—in the cases, for example, of intestinal distension, constipation of many days' duration, constant vomiting and apepsia, rapid heart-action with ow breathing, largely pulsating arteries, and phantom-umours. Some are found in commonplace, ignorant, nd slow-minded people who never saw or heard of the diseases imitated in them. Some occur in children who could neither imagine nor act what they tell and show, though as they grow-up they may become those in whose successive mimicries the mental influence takes a constantly increasing part. And, to end whatever may be ascribed to mental influence, it can produce mimicry of organic disease in only certain persons whose nervous organs seem wholly prone to this manner of disorder, and whose spinal and ganglionic systems must be deemed erroneous, as well as, or more than, their brains. For nervous mimicry is not very frequent among the evidently insane, and among the sane there are many who cannot bring about a mimicry of disease by any effort of imagination or direction of the mind. Among these I am happy to count myself. I have tried many times, carefully, and with good opportunities, but have always failed.

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[1] Tuke, *Influence of the Mind upon the Body*, 1872.

LECTURE II.

In the last lecture I spoke generally of the characters of the nervous constitution commonly observed in those who suffer with the mimicries of organic diseases. You may believe, that, however much the circumstances of a life may favour the development of such a constitution, it would not be well-marked unless it were inherited. And facts relating to inheritance deserve great weight in the diagnosis of any doubtful case of nervous mimicry.

In looking for indications of this inheritance you may not find that, in the same family, there are or have been many cases of similar mimicry of disease; but it is a fact of not less weight if, in the same family, various other forms of nervous disorders—especially of such as are, for convenience, called functional disorders—have been observed. Thus among the relatives of those with neuromimesis it is common to find cases of mental insanity, extreme 'nervousness' and eccentricity, stuttering, convulsive and emotional hysteria, various neuralgiæ, extremes of mental character whether good or bad, and sometimes (but I think less frequently) epilepsy and paraplegia. These evidences of family-relations may help in diagnosis, just as, in the diagnosis of a doubtful tuberculous disease, it is important if, among the members of the patient's family, there have been many more than an ordinary number of cases of pulmonary tuberculosis.

of tuberculous lymph-glands, of lupus, or of perforating ulcers. So, in the diagnosis of a doubtful case of gouty disease, it is important if relatives have had either typical gout, or many of the less marked forms of gouty affections of the skin, or kidneys, or any other part. It is a general fact, that if any constitutional disease is prevalent among many members of the same family, it affects them variously, in different degrees of intensity, and in different parts and textures; but by this diversity the total value of the evidence of inheritance, as bearing on a doubtful case, is not diminished.

The family-relationship between the nervous mimicries and mental insanity is specially worth considering. It helped us to the diagnosis, as some of you may remember, in the cases of two girls who were at the same time in Sitwell ward; one with strongly marked mimic disease of the hip; the other with very slightly marked real disease. The mother of the former was in a lunatic asylum; the mother of the latter died tuberculous.

I believe that a large majority of the worst cases of nervous mimicry occur in members of families in which mental insanity has been frequent. And the fact is important, not only for diagnosis, but for pathology. It may serve to strengthen the view that nervous mimicry is a mental disorder; but I believe it may be more rightly read as an indication that, whatever mental insanity may be as a disorder of some portion of the brain, the like is nervous mimicry as a disorder of other nervous centres. Surely, any nervous centre may 'go mad' as well as any part of the brain which is appropriate to any part of the mind; and may be mad in different ways, imitating the idiotic, the emotional, the maniacal, or other forms of insanity. But I only suggest this for your study, and by the way. Let us seek for other grounds of diagnosis.

Nervous mimicry is much more frequent in females than in males; more frequent from the beginning of puberty to middle age than in either earlier or later life; more frequent in the more cultivated than in the rougher classes of society. But in what proportions it occurs in each of these several groups it seems impossible to tell with any fair approach to accuracy; for no one has a field of observation so general, or so equally inclusive of all these groups of persons, as to be able to count fairly among them. I should disbelieve any statistics pretending to settle the proportions accurately. You may be sure that neuromimesis is most frequent in young women of the more cultivated classes; but you may be equally sure that it is not so rare among men, or children, or at any age, or in any social condition, as to make it unreasonable to suspect it in any case of obscure disease. You had better not let any such case pass without asking yourself, Is this disease, or any part of it, mimicry? Some of the worst cases of mimicry of disease of the spine and pelvis that I have seen have been in men and women of mature age; some of the worst of joints in young children; some of the worst of all kinds in poor people.[1]

It is equally or more difficult to find any general characters of health, except those of the nervous system, which may help to the diagnosis of mimicry from real disease. Some of the patients are in various degrees gouty; some are tuberculous; some scrofulous. The nervous constitution may be mingled in various proportions with any others, adding its own characters to theirs, making pain more intense, spasm more severe and frequent, or receiving from other constitutions characters of organic disease very difficult to eliminate.

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[1] A remarkable case in a child fourteen months old is related by Mr. Thomas Smith, *Trans. Clinical Society*, 1875. I have seen a well-marked mimicry of disease of the knee-joint in a man of sixty-three.

These various combinations of constitutions must be well studied. The most troublesome is the combination of the nervous with the gouty constitution. For in one in whom gout is not complete there are never wanting strange sensations—of tinglings, burnings, pains, pressures. In the neuromimete these become intense; his nervous system defines them or gives them form; and the difficulty of diagnosis becomes extreme. And as the combination with gout is the most troublesome, so that with tuberculosis is the most dangerous. It is through this that many die whose maladies have been made light of, and called, with a sneer, hysterical, or only nervous, or the like. They die, and often die young, not through their nervous malady, or anything directly affected by it, but through tuberculosis or some allied disease which they have inherited and which their invalid habits have made it impossible to avert. Of the nervous constitution itself very few if any die; some remain miserable invalids all through life, till some casual disease, aggravated by their general feebleness, removes them; but the majority get well; they live through the time of life in which the constitution is most marked, and then their nervous systems become more tranquil, balanced and orderly.

I think there is no constitution in which nervous mimicry is so commonly found as in patients who are said, and perhaps truly, to have a very bad circulation. Chiefly these are marked by being habitually cold-footed. In nearly all weathers and all times their feet feel no warmer than the air; indeed, they feel colder, and are often damp and, in those who are not anæmic, are purple about the sides of the toes and under the nails. Sometimes the hands are habitually in the same condition, and the skin on the back of the upper arm is usually dusky, pink and purple, coarse and papillary.

Doubtless this coldness tells of very slow movement of blood in the skin of the cold parts; and, in seeming agreement with this, the heart is commonly feeble, irritable, and swiftly acting, so that the pulse is very quick, while the breathing is comparatively slow. Often, the inconsistency of a quick pulse with only natural or slow breathing and a low temperature may nearly suffice to tell that some very painful disease of long standing is only 'nervous.'

But, besides, this habitual or very frequent coldness of the feet probably indicates a contraction of the small blood-vessels dependent on disorder of nervous supply. For the phenomena are very variable. Some patients have such feet as, they say, cannot be warmed: they are cold all night, cold while long wrapped in warm flannel; and even when warmer they may become cold under mental influence. But in some the feet, after being cold all day, flush in the evening; in others they become red and even painfully hot, puzzling the student of diagnosis.

Such variations in the state of blood-vessels in any part seem to tell of nervous disorder overrunning from he cerebro-spinal into the vaso-motor nervous system. They are weighty evidences in favour of nervous mimicry n any doubtful case; and they become more so when, however often and extremely widely the supply of blood may have varied, the nutrition of the part remains unaffected.

The temperature of a patient in whom you are doubting between real and mimic disease should always be observed. Speaking generally, it is not affected in any degree proportionate to the signs which may seem like those of acute disease. With a joint or a spine as painful as in the most acute inflammation, there is usually a constantly natural temperature; and so of other nervous disorders imitating inflammations in other parts. And this inconsistency may settle your doubts. But if the temperature be variable, or often high, you must be cautious. You may rely much on heats and chills, on shiverings and sweatings, as signs of true disease in parts, and as very probably signs of suppuration; yet they are not quite sure. Many sensitive persons shiver on very slight provocation; for instance, when they are in pain or anxious, or what they call bilious, or exhausted. In hysterical persons, a shivering may take the place of an ordinary hysteric fit. Weakly persons, by whatever weakened, sometimes perspire very freely at night; and mere nervous excitement may raise the temperature to at least 101°. I have seen a case in which, for nearly a month during convalescence after fever, the temperature rose two or three degrees every night; the patient had some signs of joint-disease, but the end of the case showed that there was no real morbid process present.

And it may often be observed that, though with little or no organic disease, a nervous patient's temperature may be normal or not above 101°, yet with a moderate addition of acute disease the temperature may rise much higher than it would in anyone with a healthy nervous system. I perforated an abscess in a very hysterical young lady's tibia; a few days afterwards the escape of pus was casually hindered, and in that evening her temperature rose to 105°. In the next evening it was 104·1°. In the following morning it was 100·5°; in the evening 101·5°; and then it fell nearly to normal. And this had happened without any material pain or inflammation; and, even when the temperature was 105°, she was cheerful and with a pulse about 100. Her respiration was natural.

These facts may be enough for caution against over-reliance on any one sign of disease in patients of nervous constitution, even though it be the measurable temperature. Prudently estimated, it is of the highest value, even in nervous patients; over-estimated, it is more fallacious in them than in any others.

In all nervous constitutions, especially in those with the habitual coldness of the hands and feet of which I was just speaking, it is common for many of the internal functions to be torpidly and scantily performed. The bowels are often inactive, sometimes marvellously slow, the gastric digestion is feeble, and menstruation is scanty and irregular or altogether suspended; but in these things there is no rule: in some nervous mimics the functions of organic life are done well enough.

In the defective ovarian and uterine functions of certain patients some see the centre and chief substance of the whole disease: a very mischievous fallacy. Of course the sexual organs appear generally in fault to those who are rarely consulted for the diseases of any other part; but in general practice they are, in a large majority of cases, as healthy as any other parts are, or not more disturbed. The close and multiform relations of the sexual organs with the mind, and with all parts of the nervous system, are enough to make the disorders of these organs dominant in a disorderly nervous constitution; but their relation to 'hysteria,' or to 'neuromimesis,' though more intense, is only the same in kind as that of an injured joint or an irritable stomach. All, in their degrees, may be disturbers of a too perturbable nervous system; and equally on any one of them the turbulence of a nervous centre may be directed with undivided force.

In patients with very strongly marked nervous constitution, a mimicry of organic disease may ensue as if spontaneously—without provocation. And the chances of such an event are greatly increased in the weakness of convalescence after acute disease, a condition in which whatever is wrong in any constitution has the best opportunity of appearing in force. But much more generally the mimicry begins after some event which has the relation of an exciting cause, determining in many instances not only the occurrence of the mimicry but its locality.

These exciting causes may, then, be our next subject; and these also may be studied chiefly with a view to diagnosis.

Among the chief are sudden mental distresses, emotion, disappointment, long anxieties, or exhaustion by overwork. When any of these can fairly be traced as inducing a seeming organic disease, the probability of a neuromimesis is increased. Sometimes the effect of mental strain is very striking. I saw one day a young gentleman who had been overworking for a civil-service-examination. After a three hours' mathematical cram he fainted, and when he rallied had a very close mimicry of paraplegia, which lasted many weeks. On the same day I saw a gentleman who had been greatly overworked in a prosperous business. He kicked his great toe severely, and had a mimicry of tetanic convulsions in the limb, with night-panics and other curious nervous symptoms, which after a few days were followed by the sensations of spinal disease such as one of his brothers died with. This patient was supposed to be strong, but was really very nervous, timid, and watchful. The other was generally calm, active, and vigorous; but one of his sisters had had severe hysteria and apepsia.

In cases such as these the mental disturbance appears as an exciting cause; in others of longer duration, as with constant anxious watching or any feelings long suppressed, if the mental states may not be regarded as exciting causes, they so greatly enhance the tendency to nervous mimicry that its outbreak may seem spontaneous.

In another form, a mental condition may be regarded as the determining or exciting cause—namely, when a patient imitates unwittingly and unconsciously another person's disease. In a case which I do not doubt was a neuromimesis of hip-joint-disease, with limping, and with eversion and contraction and some pain of the thigh, I found that the patient's brother had advanced true hip-disease—a fact which rather added to the difficulty of diagnosis, for with the probability of similarity of constitution in two brothers it might be deemed very probable that both would have the same organic disease.

Similarly, through sympathy, even without family relationship, one person may acquire the sensations of disease described by another. In the fortnight following the death of the late Emperor Napoleon, I was consulted by four persons who described, as they felt, the sensations of stone in the bladder. One had some slight disease in the bladder; the others were healthy men, except in that they had nervous irritable bladders; but there was not any ground for a suspicion of stone in any of them, and none of them had suspected it, or felt the sensations that led them to the suspicion of it, till they were excited to attention and suggestion of these sensations by the constant thinking and hearing of what were supposed to be the sensations of the Emperor.

More frequent probably than any mental state, among the exciting causes of nervous mimicry, is injury of any kind, especially of bones and joints. In the majority of the cases of mimicry in these parts, and in the spine, injury is told of as the cause of disease. The history thus adds to the difficulty of diagnosis; for injury is as often the cause of real disease—and after injury, let me tell you, nervous mimicry is not only more difficult to be sure of, but harder to cure. For there is something tangible to appeal to, something which would indeed be quite inadequate to explain any severe symptoms in a person of sound nervous system, but which the mind and mimicry can invest with symptoms enough for even the gravest disease.

In many cases you will find it very hard to tell what has determined the locality of a mimic disease. If it be not injury, it may be some inherited local disposition to disease, or a special local excitability; but when we cannot even guess, there may yet be no ground for doubting that the malady is mimetic, for we are in only the same difficulty as we often are in trying to say why gout is in some persons localised in the hand, in some in the foot, in some in the skin, or stomach, or bladder. In all alike the constitutional malady may be clear, however obscure may be the conditions determining its local evidence.

I say the constitutional malady; and let me again and again repeat, that in every case of this kind you are to look, for the essence of the disease, to the general condition of the nervous system. There is no greater fallacy than to suppose that nervous mimicry, or hysteria, or any of the allied forms of disease, can be referred to any malady of any other part than the nervous system. There is not an injury or a disease of the ovaries, or prostate, or any other part, to which hysteria, hypochondriasis, or any allied malady has been referred, which may not be found, in some persons, free from all nervous complications whatever. It is only the hysterical by natural constitution who can be made to display hysteria by any local disease or injury—only those who are by constitution predisposed to nervous mimicry in whom such mimicry can appear.

LECTURE III.

ON NERVOUS MIMICRY (NEUROMIMESIS) OF DISEASES OF JOINTS.

I HAVE said all that I think necessary, for help in diagnosis, on the general conditions of patients in whom mimicry of disease occurs, and on the events which appear as exciting causes of the mimicry. I will now speak of some of the special mimicries, beginning with those of diseases of the joints, and still trying to teach, almost exclusively, their diagnosis.

Let me repeat the rule that, in every case, you should study the local before the general symptoms. You will often go wrong if you take the contrary course. In the most evidently hysterical patient there may be a real joint-disease; in the least evidently there may be a mimicry: and the error of treating a real disease as 'only nervous' is one of the worst that can be made; it may be as bad as that of amputating a limb for a mere mimicry of disease.

Among the diseases of joints, those which are most often imitated are the more or less acute inflammations; not, unless very rarely, the rheumatic or gouty or any of that class, but the so-called common inflammations, and the scrofulous. If you would think of the importance of studying them, remember that Sir Benjamin Brodie, to whom more than to anyone else of any time we are indebted for knowledge on these subjects, said that, 'among the higher classes of society, at least four-fifths of the female patients who are commonly supposed to labour under diseases of the joints labour under hysteria, and nothing else.' This statement, of course, does not refer to the class of gouty and rheumatic diseases of the joints; and it needs, I believe, an amendment by the omission of the words 'and nothing else,' for part of the large proportion is made up by numerous cases of trivial disease or injury made to seem severe by hysteria or other nervous fault. The words 'higher classes,' also, need strong emphasis: for among my hospital-patients, whether in or out-patients, I think I can be sure that the proportion of nervous joints was less than one-fifth; and even in private practice the proportion of four-fifths is not attained unless in practice almost exclusively among the most cultivated classes.

Among all the joints, the hip and the knee, which are the most frequent seats of real disease, are equally so of the mimicry: a fact not easy to account for. It may be due to mental association, perhaps unconsciously; or to a mingled inheritance—for instance, to an inheritance of nervous constitution and of relative weakness in the joint or joints most weak in progenitors. After the hip and knee follow, in order of frequency, the tarsal joints and carpal, or the elbow and shoulder: but in these mimicries are too rare for counting.

Another fact, adding to the difficulty of diagnosis, is that the most frequent exciting causes are the same for the real and for the imitated affections of the joints. The imitations, like all the similar nervous affections, may sometimes be traced to mental fatigue or anxiety or worry; but more often, an injury or over-exertion of the part is referred to as the source of the mischief. The injury may seem inadequate for such trouble as followed; but you cannot rely on this. Many of the worst instances of scrofulous arthritis follow injuries that seem very trivial. It may suggest a suspicion of neuromimesis if pain set-in with full severity directly after an injury that was not severe; but the suspicion must be lightly held. One of the most acute inflammations of the hip-joint I have seen set-in severely, with an almost agonising pain, directly after a wrench of the joint in quickly turning round.

Thus, then, you can get little help for diagnosis from either the seat or the apparent cause of the malady: they are for the most part the same for the real and for the mimic affection. Your reliance must be on the examination of all the features of each case, and on a right estimate of the weight to be attached to each. Let me then take, in turn, each of the signs of inflammatory affections of joints, and see how far they may be imitated, whether separately or together. For although it may be said, generally, that an inflammation of a joint should be marked by many signs, and that in a well-marked case you may study them all, yet, in practice, you cannot treat lightly any case which has even one clear sign of diseased joint; for this may be only the first sign which others will follow, or the last which has survived the rest; or it may be one which is so exaggerated as to conceal the others. What is wanted in every case of suspected disease is, that you should be able to say positively Yes or No; and this you cannot do without knowing the weight in evidence of each usual sign.

First, as to pain. Alone, it is not to be at all relied on for a sign of inflammation of a joint; especially if it be severe. If a patient be ready to scream when the accused joint is touched, and yet the joint is not overwarm and the patient not feverish, you may be nearly sure of neuromimesis; and more nearly still if the pain be rather in the parts outside or about the joint than in the joint itself, so that a gentle touch is said to hurt as much as a hard one, or a pinching of the skin as much as pressure on the joint itself. You must not even rely on what are supposed to be characteristic pains, such as those felt at the knee for disease of the hip, or about the middle of the arm for disease of the shoulder, or even those grinding and burning pains at night which some regard as characteristic of ulceration of cartilages: all these may be mimicked.

I had a boy aged about fifteen in the hospital who had these night-pains in a most marked degree in one knee, and the joint was a little swollen; and he, being tuberculous, was wasting, hectic, and very ill. I did not doubt that he had destructive articular disease, and the use of the actual cautery cured his night-pain—another reason, some would have said, for being sure that his articular cartilages were ulcerating. Soon after this he had similar pains in or near the tibio-fibular joint, and these also were cured with the cautery. But he went-on and died with pulmonary tuberculosis, and I examined his knee-joint and found it almost healthy. A very small piece of one edge of the cartilage on the femur appeared eroded, but it was a trivial change, and quite inadequate to account for the severe pain of which the lad had long complained.

The case had been one of nerve-pain at the joint, and the imitation of organic disease had been made closer by the signs of the coincident disease of the lungs. But for this, it might have illustrated what you may take as a general rule—that acute pain in a joint, if it has existed for even a few days without either local or general increase of temperature, is not a sign of acute inflammation of the joint. It may be rheumatic disease or rheumatic gout, or some slight inflammation after injury in a neuralgic person, but it is not acute inflammation.

There is more difficulty in judging of the meaning of pain in a joint when it is not severe, but dull, aching, 'wearing,' as patients describe it. You must be cautious in these cases. Pain alone is not enough to prove organic disease; yet the lower degrees of pain seldom exist constantly and long without some organic mischief. I have indeed known several such cases, especially of pain at the hip, the conclusions of which made me believe that the pain was only nervous; for the patients got at last suddenly or very quickly well, without stiffness or other apparent change at the joint, or with a shifting of pain to some other part. But in all such cases you must be cautious and watch for other signs of disease adding themselves to the pain, such as local heat, swelling at the joint, wasting of parts about it, and others that are least dependent on the sensitive nervous system.

The pain I have been speaking of is that which may be felt in the joint even while it is at rest. Different from this is the pain which prevents the free movement of the joint. It is observed alike in the real and the mimic disease; and you may often judge the pain to be mimicry by its inconsistent severity. If with scarcely any other sign of disease a joint will not permit the slightest movement because of pain, you may greatly suspect the reality of disease; but be very careful not to overlook the signs of increased pain on movement in cases of slight real disease, especially in the diseases of the hip in children. You may often find this the only sign making it clear that a child has real hip-disease. A suspected joint may allow free and smooth and painless movement till, for instance, in extreme abduction of the thighs one adductor becomes much tenser than the other, or in extension the loin is quickly raised, or, by some other movement, it becomes evident that the joint will not allow extreme movement without pain, although within all but its extreme range its movements may be free and painless.

In these, among many cases, chloroform or ether may help in diagnosis. In the real disease, as in the mimic, while the patient is utterly insensible, the joint may be moved as widely as in health, unless, indeed, there be such changes in its structure as might alone have proved its disease; but commonly you will observe that, in the real disease, the muscles become alert and restrain the movement of the joint before the patient has regained consciousness: while in the mimic disease there is no restraint till consciousness is completely regained. The test is a delicate one, but I think I may be sure that it is a true one, and fit to be relied on, whenever the chief sign of disease of a joint is a restraint of movement on account of pain and the guarding action of muscles.

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Closely allied with this pain on movement of an in-amed joint is its stiffness, with contraction or other set osture dependent on muscular action; for this posture, hether it be due to choice or to reflex movement, is the osture of greatest ease, or of safest guard against weight r shock or other causes of pain. The absence, therefore, the fixed or nearly fixed posture usually observed in diseased joint may always suggest the suspicion of mimi-y. It would be rather strange to see a hip or knee ctended after many weeks of such pain as would be felt an acute arthritis, unless indeed, they were rheumatic gouty, with exaggerated pain, or had been carefully aintained in good position. It would require the pre-nce of many other signs of real disease to counter-lance the absence of this sign; for diseased joints, ft to themselves, will be habitually or always in the sition easiest to the patient.

But the reverse of this is not true. Very commonly joint mimicking disease assumes the posture of disease—sumes and maintains it stiffly in even an extreme degree. his may be seen even when there is no objective pain in e joint; but much more, when the joint is a little really ainful. After a blow or strain the nervous condition of patient may either make the pain so intense as to de-and the position of greatest ease, or may bring-about his position for the relief of even a little pain. Especially he posture of hip-disease is apt to be imitated by the rawing-up of one side of the pelvis and rotating it, so hat the limb looks shortened.

The conjunction of pain and stiffness in a joint always looks like real disease; but you may generally detect the mimicry by observing that, while these things would indicate disease of much severity, everything else is as if there were no disease, or at most only a very mild arthritis. The inconsistency of the several parts of the case exposes its true nature. Lately I had to see a young lady, with a reported healthy nervous system, whom I found lying in bed with extreme contraction of the thigh towards the pelvis, pain at the hip and knee, increased pain on any touching near the hip-joint, and especially great pain and tenderness at and about the tuberosity of the ischium. She could not bear the least attempt to straighten the joint, and the contraction was said to be persistent during sleep. She had had vomiting, hated food, and looked ill and distressed; and all these troubles were ascribed to slight injury or over-fatigue a few days previously. The case looked very like real disease of the hip; but if it had been so at all it must have been a very acute disease, swift and severe, such as should have had attendant fever. Yet the pulse and temperature were natural, and there was certainly nothing in the case which might not be explained by mere nerve-disturbance. And the event proved that there was no organic disease, for after a few days' rest, with careful food, and some wine, and mental quietude, the pain ceased, and then very slowly the limb resumed its natural power and posture, and the young lady married and is well.

Let me here tell you of two or three notable groups of cases of pain and stiffness of joints without real disease. None are more frequent than those of boys from 10 to 15, who complain of pain and declare themselves unable to walk after injuries of the ancle or knee, or who disuse their arms for pain after injuries of the elbow or other part. They describe the pain as horrible, and hold their limbs in some unnatural position, and limp and cry when you try to make them walk; yet you can find nothing wrong in the shape, or size, or temperature of the joint, or in the general health. It is very hard to say whether they are shamming or neuralgic; but the utter inconsistency of their cases proves that they are the one or the other, and you must make them use their limbs. They will often do it better if you have first moved the joint severely for them and 'loosened' it.

Something like these, yet different in having little or no pain, are the children who mimic a disease of a joint through fear. After a hurt the immense care bestowed on a joint, and the earnest injunctions not to move it, seem to impress some children's minds so deeply that, long after all is well, they hold up their joints scrupulously and timidly, and dare not try to use them. You may amuse yourselves with the astonishment with which both child and parents find, on a positive assurance, that walking or any other use of the lame limb is quite easy and painless.

Another group allied with these is that in which you find young people with joints contracted by involuntary and quiet muscular power after injury. The joints are painless unless when great force is used at them; and you can easily feel that their stiffness is not through inflammation or adhesion, but through muscular resistance like that which sometimes produces wry-neck directly or very soon after a blow. You feel a kind of elastic recoil at efforts to move them, as if the effort were resisted by a tough elastic substance. Ether or chloroform decides at once the diagnosis; as soon as the patient is insensible the joint becomes moveable as widely and as smoothly as an uninjured healthy one, and only slowly if ever stiffens again.

Just like these are the ordinary cases of painless stiff joints in hysterical girls: the muscles hold them fixed, and that is all; the joints are healthy to the touch and the sight, and even to the patients are painless unless violently used.

In all these cases the ground of diagnosis is essentially the same. You have one or two or three signs of the disease of a joint present in an extremely marked degree, or at least well marked; a pain, or a stiffness, or both, and limping or other consequent disability, such as would exist in a joint severely or long diseased. But with a joint really thus diseased there should be—unless it had some chronic-rheumatic or gouty trouble—swelling, or heat, or spoiled shape, or general wasting of the limb, or all these together; and with them usually some disturbance of the general health. The absence of these is weightier evidence than the presence of the other symptoms.

All that I have just been saying relates to the distortion of joints produced by muscular action, not to deformity due to displacement of one or more of the bones forming the joint, such deformity as you see, for instance, in the knee, when the tibia falls backwards and outwards from the femur, or is rotated by the weight of the foot, on which also the bedclothes may have been allowed to rest. When this or any similar deformity exists, it is a nearly sure sign of real disease, past or present, for it can scarcely happen except through textural changes, through softening of the ligaments and other structures about the joints permitting one bone to move away from the other. Now such softening as this can hardly take place except in inflammation. I will not say that it is impossible, but I know that it is very rare. Posture alone, though very long-continued, will not produce deformity of joints with displacement of bones. I saw a gentleman who, in a half-lunatic condition, sat for five years in the same posture, and was credibly said to have never moved. At the end of this time his knee-joints were contracted to a right angle and felt as if absolutely fixed; yet they were not deformed. Their bones had their right relations; and, after some weeks of extension with instruments, the knees were straightened, and power over them was completely gained.

So, too, in a case told me by Professor Flower. A man, whose skeleton is at Marburg, was encased by his relatives for twenty years in a space in which he could only sit with his limbs doubled-up, and in which he could have had only very narrowly restrained movements of his joints; yet his limbs did not become deformed, and his joints retained their normal textures. And many a case of hysterical joint, after being contracted for years, has recovered without any error of shape.

Speaking generally, then, the presence of deformity in a joint reputed diseased may be taken as certain evidence that it was or is diseased, and the absence of such deformity in a joint which has been long very painful or, in other characters, has seemed acutely diseased, is nearly as certain evidence that there has not been acute inflammation; unless, indeed, the shape of the joint has been maintained by careful treatment. A few weeks of acute inflammation of a joint will almost certainly change its shape and the relations of its bones, unless care is taken to prevent the change; but even many months of mimicry of acute disease will not produce or permit such change.

LECTURE IV.

it seem strange to you that I should devote two tures to the subject of the mimicry of diseases of joints subject which is usually dismissed with a few lines,— me say that I estimate its importance by what I know e its difficulty. I rarely pass a week without seeing least one very doubtful case, in which a diagnosis not be made without a complete consideration of all symptoms discussed in the last lecture and of others e spoken of in this. For difficulties such as these lectures may be tedious, but they are not superfluous. et us, then, go on with the symptoms of diseases of , and see how the mimic may be distinguished from eal. And the next shall be the wastings of limbs he affected joints. This wasting occurs quickly rly all acute inflammations of joints; more slowly chronic inflammations. In the chronic it may be isuse alone: in the acute it is not so; for it more rapid and extensive than in any cases of suse. Compare, for instance, cases of fracture high with those of acute disease of the hip, and easily see how much greater is the wasting with ease than with disuse alone. Rapid wasting may n the whole lower limb, especially in the thigh iates, in all acute hip-joint-diseases; more slow the painless scrofulous diseases; less in the chronic rheumatic. Wasting in the lower part of the anterior and lateral muscles of the thigh is quickly evident in acute knee-joint-disease; only less quickly in the chronic. In similar affections of the shoulder you may see it in the flatness of the deltoid and of the muscular coverings of the scapula; and I think that the same wasting occurs, in greater or less degree, in all muscles near joints that are inflamed; and the more quickly, the more acute the inflammation. It is, I repeat, not a mere wasting from disuse: it is far more rapid than that; more like what has been called acute atrophy of muscles, such as may be seen in the swiftest cases of infantile paralysis; and it is, I think, very rarely if ever so well repaired as is the wasting from disuse.

This process of wasting is one of singular interest in pathology. I wish I could explain it better than by calling it reflex atrophy. It seems dependent on disordered nervous influence, and often appears proportionate to the coincident pain, as if it were due to the disturbance of some nutritive nervous centre, irritated by the painful state of sensitive nerve-fibres.

But, however the wasting may be explained, it is, unhappily for our present needs, not certainly diagnostic of real joint-disease. You may find it nearly as marked, though not so quickly progressive, in some nervous affections as it is in acute inflammatory joint-disease. I say you may, not you will; and I cannot tell you in what nerve-cases it will be found, in what be absent. I believe it is in inflammations of nerves or in inflammations involving spinal ganglia; but I cannot tell. However, as to diagnosis, you may find inflammation of the hip-joint imitated, so far as pain and wasting are concerned, by some painful affections of the sciatic nerve; inflammation of the shoulder-joint by painful affections of parts of the brachial plexus; and, more frequently, the wasting at the lower part of the thigh, which is common with acute inflammation of the knee-joint, is closely imitated in the cases of certain knee-joints which are painful but not inflamed. In the cases of this kind that I have seen there was no sign of inflammation besides the pain; no heat, no adequate swelling—if, indeed, there were any at all; the patients were nervous or hysterical, and at the end the joint though wasted was unchanged in shape and structure.

You may hold, then, that, generally, the wasting of the muscles about a suspected joint adds to the suspicion that it is or has been inflamed; but you must hold this cautiously. You must expect to meet with cases, however rarely, in which similar wasting attends pain at a joint without inflammation. But, all the more because of these cases, you may hold that if a joint has long been very painful, and yet there is no wasting of the muscles near it, it is not inflamed.

Let me tell you, by the way, that wasting at the knee is commonly produced and is always aggravated by the wearing of elastic knee-caps or tight bandages. I have often been surprised to see how quickly and to what extent these pressures will produce wasting of muscles and weakness, aggravating all the trouble consequent on injuries and diseases of joints. They will in this way do such damage, that, except for comfort during active exercise, or for the purpose of reducing chronic thickenings and collections of synovial fluid in joints, I believe they ought never to be used.

Wasting, then, can be only cautiously judged as among signs of real joint-disease; it is too common in mimicry to be a safe sign of reality. And so is another sign; impaired utility, or awkward use, such as we have to observe most often in limping or other manner of lameness.

The use to be made of this sign in diagnosis is as of pain. It may be absurdly exaggerated, caricatured; and by mere excess may prove itself unmeaning, as when a patient in good general health, and with a cool or cold well-shaped foot, has maintained for many weeks that it is impossible to bear weight on the foot; or when one, in whose knee you can neither feel nor see any wrong, goes limping as if with an utterly ruined joint. Here, as in many other cases, inconsistency proves unreality.

The difficulty of diagnosis is far greater when there is only slight limping or other impaired use of a joint. Here you had better be very watchful and cautious, and err, if at all, on the side of believing in real disease; for the cases are frequent, especially in children, and in serious diseases of the hip, in which the first, and for a long time the only, sign of real disease is some limping or other erroneous use of a joint.

As you watch the cases in which limping or some manner of lameness is the chief or only apparent sign of disease of a joint, you will find that some depend on, or are ascribed to, mere muscular weakness of the limb, some on a partial slight chorea. The former are often associated with what Sir B. Brodie pointed out as some-mes occurring in hysterical persons—a peculiar laxity limpness of joints. These are not difficult of diagnosis; a really diseased joint is loose the disease is very plain. he choreal cases, among which I have seen one which ppeared due to ascarides, are more likely to deceive. In me there is a sort of string-halt—a quick jerk-up of the eel at every step, faintly suggesting some affection of the nee-joint. Much more puzzling are the cases of slight horea of the whole lower limb in which, as a patient walks, he limps, and jerks, and throws-out his leg, somewhat after the manner of one with early disease of the hip. The likeness is, indeed, not very marked; yet in two cases that I have seen it caused great fear: in one, because of the importance of the patient; in the other, because the limping followed a blow, and a brother of the patient was crippled with serious scrofulous disease of the hip. In this case, too, the ordinary posture assumed in standing was—by imitation, I believe—like that of diseased hip, with the half-pelvis raised and the foot pointed. The diagnosis of such cases may rest on these facts: if the other usual signs of diseased hip-joint are absent or very little marked; if the limping movements are not careful but quick and jerking; if the passive movements of the joint are complete and free; if when the patient stoops, so as to touch the feet with the hands, the figure becomes symmetrical; there is no real disease. And this will often be certified by choreal movements, such as twitchings of the face or eyelids, told of or still present.

I have thus gone through the chief reputed and usual igns of inflammatory diseases of the joints which may be imitated by nervous affections closely enough to make a diagnosis difficult. But other signs remain which are much more rarely imitated, and never closely, except in some cases of complication of nervous affections with fever or other accidentally concurring diseases. These are swelling and local heat and fever.

Now, as to swelling of the whole or part of a joint, its absence may be nearly enough to prove that a joint in which there is intense pain or other sign of acute disease, or which has been long painful, or in any way seemed long diseased, is only nervous. Inflammation of a joint, either very acute or of long standing, can hardly be found without visible or tangible exudation in the joint-cavity or in the textures bounding it. But there are many cases in which you cannot apply this rule for diagnosis. A joint shrunken after long disease may relapse into inflammation without renewed swelling, till perhaps a residual abscess[1] appears. A hip-joint may be acutely inflamed without any discernible swelling; so, less often, may be a shoulder, the exudation being too little to be felt. And, making more difficulty, swelling is sometimes evident in a merely nervous joint; not indeed considerable swelling, but enough to make a mimicry of real disease much more close. You may often see this in the loose tissue by the sides of the ligamentum patellæ. The swelling sometimes appears due to such slight exudation as may ensue in any neuralgic part; like the puffiness that may come-on in facial neuralgia, or the swelling and congestion of the conjunctiva in some cases of orbital neuralgia. Such swelling is commonly transient and capricious, and the fallacy may be detected by observing that, at its greatest degree, it is not, even after long time or many repetitions, nearly proportionate to the pain or duration of the disease. For a joint which is intensely painful, with acute inflammation, or with ulceration of cartilages, should be, if not at first, yet soon after, considerably and always swollen.

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[1] See *Essay on Residual Abscess.*

In other cases, swelling of a nervous joint may be due to accidental conditions. For instance, repeated blisterings or repeated paintings with iodine will give, for a time, such thickening and puffing of the subcutaneous tissue about a joint as may be very deceptive when added to the other signs imitating inflammation of the joint. So, again, I have seen such a condition in a very marked degree produced by the long-continued use of ice about a painful joint.

On the whole, then, the absence of swelling makes it very unlikely that a joint is really diseased; so does the presence of only a trivial swelling when the nervous and muscular signs of disease are acute or of long standing; and when swelling exists it must not be counted as adding to the probability of real disease, unless it persists and is independent of such accidents as I have already named. And remember that a sensation of swelling is not unfrequently complained of when no swelling whatever exists. It is just one of the erroneous sensations to which nervous persons are prone, as they are to sensations of unnatural fulness and of weight for which there is no substantial reason. Such a mere complaint of swelling will not deceive you if you compare the suspected joint with its fellow.

But, after all, the sign most to be relied on for diagnosis between real and nervous disease of joints is th temperature. It is so important to estimate it accuratel that I cannot too strongly urge you to be always studying it. You should feel with a broad surface of you hand every joint very watchfully, comparing each tha is supposed to be diseased with its fellow supposed o known to be healthy, till you learn, as you certainl may, to detect even a small difference of temperature i even a small part of a joint.[1]

When you have learnt to feel accurately the heat of joint, you may safely rely on it for some certainties i diagnosis. A joint that feels all over cold, or cool, o not above its natural temperature, is not an inflame joint: whatever may be the other signs of inflammatio in it, it is not inflamed; you may rely on this. In the hip and shoulder, however, this test of temperature is no easily applicable. The thickness of various texture covering those joints is too great for additional temperature to be transmitted through them. But in the kne and elbow, and other smaller joints, even those of th fingers and of the tarsus and carpus, the test is easil applied and sure; and remember always, in using it, tha in most persons the front of the knee-joint, and, in a le degree, the back of the elbow, are habitually cool to th touch—cooler than the arm and leg; and that in man the feet are rarely warm in health. These local variations, however, can lead to no confusion if you follow th rule—which, for other reasons as well as this, ought be never neglected—of comparing every suspected joint with its fellow. Besides, always compare the temperature of the joint with that of the rest of the limb, for the rest of a limb may be, through disease or long defective nutrition, cold; and if one joint in it be always not cold, though it may not be fairly called hot, this may be through its being inflamed. I repeat, then, a joint which is not above its natural temperature is not an inflamed joint. But observe, besides, some rules within this rule.

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[1] Mr. Hilton strongly insists on the value of heat as a sign of local flammation.—*Lectures on Pain and Rest*, 2nd ed. 1877, p. 61. [ED.]

A joint when first exposed for examination may feel over-warm. This may be due to its having been very warmly wrapped, or thickly covered with water-dressing, or in some other way hindered from cooling to its natural temperature. Wait, therefore, and observe whether, after a few minutes' exposure to cool air, the joint has become of the same temperature as its fellow or as the rest of the limb. If it have, you may be very nearly sure it is not inflamed; or your suspicions that it is inflamed may increase with the time during which its cooling is delayed. Frequently only a part of a joint is inflamed, and in this case the morbidly high temperature can be felt only over the inflamed part. This limitation of a sign of inflammation which one might suppose easily diffusible is a striking fact. It is the same with the swelling, which, especially in scrofulous inflammations of joints, is often limited to a single portion.

Not rarely when you feel a joint quite cool, the atient will tell you that it is, nevertheless, at times very ot or burning hot, and that with this heat it swells and comes red. Such cases may be gouty; but they are re common among those in which the consequences of sprains and other injuries are very prolonged in nervou persons, or even in healthy persons whose joints hav been too long treated with cold douches or too long kep at rest. These joints are commonly reported as gettin very hot every evening, and as being subject to painfu heats, tingling, and burning. In any such case you ma decide that the joint is not inflamed. If it were, it shoul be over-warm all day and all night. The occasional hea is only due to flushing, such as some nervous people hav in their faces after their meals, or such as women commonly have at the time of ceasing to menstruate. I cal it flushing, not blushing, for it is not associated with an mental state; indeed, it may seem strange that, amon all the nervous people with joints that are the constan objects of their attention, one never sees blushing of th skin over them when they are being looked at. All such turgescence and transient heat are consistent with complete absence of organic disease. Doubtless the same thing may happen in inflamed parts; they are sometimes hotte than at other times, more swollen and more painful having periods of exacerbation; but then they are neve of natural temperature—they are always more or les too hot. It is very different with the mimicries of inflammation in joints; here the over-heat is only at times at night or at some nearly regular hour, or after exercise or fatigue. A joint which is cold by day and hot by night is not an inflamed joint—that is certain.

The certainty of the diagnosis based on coldness is, if possible, increased by coincident duskiness of the skin—by its having the dull purplish tint which is commonly called blue or a dull pink. Such colours may be seen at oints long inflamed, but in these cases they are associated with over-heat; when they are associated with coldness, they are characteristic of anything rather than inflammation. Besides, with inflammation the colours of overfulness of bloodvessels are only at the inflamed parts; with congestion in cold nervous joints they are commonly much more widely diffused.

Lastly, as to fever associated with a supposed inflammation of a joint. It may help you to diagnosis in some few cases, chiefly in those in which the pain is very severe, or in which there are other signs like any of those of acute inflammation. For no very acute inflammation of a considerable joint can exist without fever; and therefore, when a patient's general temperature is normal, you may be very doubtful, to say the least, whether an intensely painful joint is inflamed. But the reverse is not true; the temperature may be frequently or habitually high, though a suspected joint be only neuralgic or in some other mimicry of acute disease. For the patient may be tuberculous or, with some casual illness, may have a high temperature, or he may be recently convalescent from acute fever. Moreover, a very slight degree of inflammation in a joint in a very nervous person may be associated with a disproportionately high general temperature. This is in accordance with a general rule already mentioned—that in those with alert and mobile nervous systems a slight local inflammation may produce or be associated with a great increase of general temperature. In similar persons, fatigue or passing excitement will raise the temperature to 100° or, I think, to 101°; and in their convalescence from acute illness—a condition in which nervous mimicry, as well as real joint-disease, is apt to appear—they have widely variable temperatures. You must therefore hold, as a general rule, that, in very nervous persons, the temperature must be studied many times, and with circumspection, before it is counted as an addition to the evidences of their having real joint-disease. Within the last few days I have been very nearly deceived in such a case. A gentleman, about thirty, had what he described as frightful paroxysmal pain in one knee—pain such as might have been in the most acute inflammation of the joint; and there were some heat, some swelling, and a general temperature of 101°. These things had 'come of themselves' within three or four days, and the patient looked very ill. Of course he was treated cautiously; and all subsided so quickly as to make it sure that no serious, if indeed any, organic disease had existed. It was a nervous mimicry ensuing upon excessive and unsuccessful work.

LECTURE V.

ON NERVOUS MIMICRY (NEUROMIMESIS) OF DISEASES OF THE SPINE.

FOR the next group of cases of neuromimesis or nervous mimicry I will take those of Diseases of the Spine. They are nearly as frequent as the imitations of diseases of the joints; and their diagnosis, of which alone I shall speak, may be studied in the same way; weighing the evidence of each of the chief local symptoms, and then adding or subtracting whatever may be gathered from the patient's constitution and the history of the case.

The chief things to study in the spine are pain, stiffness, weakness, and deformity.

As to pain—spineache and backache, often not distinguishable, are perhaps the most common sufferings of the whole class of hysterical and other such nervous patients. Few escape them. But, then, similar pain is so common in other patients besides the nervous, and is found in so many and so various diseases, that pain alone can rarely decide a diagnosis. I must leave out of the question all the 'backaches' that belong to lumbago, rheumatic gout, uterine, ovarian, renal, and other maladies, and try to answer for you only this: Are there any characters by which we may distinguish between pain that signifies real disease of the spine and pain that mimics such disease?

Well, we cannot always do so. There is no pain which is characteristic of real spinal disease—no manner of pain which may not be closely mimicked; but, in many cases, the nervous mimic-pain has characters which are not all found together in real disease of the spine.

Nervous spineache is often described as very severe—raging, racking, as if the back were breaking, and so on. Now, such pain as this does not occur in real spinal disease, unless when the pain of some slight disease is immensely exaggerated in a nervous constitution, or in the acutest form of inflammation of the vertebræ—a very rare disease, always associated with serious general illness and impaired mobility of the spine. If there be no considerable attendant illness, an intense and horrible pain in or at the spine does not mean serious disease of the spine. I do not say that such pain is always merely 'nervous' when it is the only wrong complained of. It may be due to gout, or to aneurism, or cancer, or to some distant malady in a nervous constitution; but, unless in the cases of aneurism or cancer, it is not a sign of serious disease involving the spine.

And this negative becomes the stronger when with such a pain there is excessive tenderness of one or more parts of the spine. Some tenderness on pressure of spinous processes may be found with real disease of the spine or cerebro-spinal membranes; but excessive tenderness is not, unless in the rare instances of periostitis of one or more spinous processes, which are usually associated, I think, with syphilis. It is rather characteristic of merely nervous disorder, of the so-called spinal irritation, and usually you find it, not at one, but at two or more parts of the spine, most frequently between the scapulæ and at the loin. At these tender spots the nervous patients cannot bear to be touched; they flinch and writhe when the finger taps or presses them very gently. You may be nearly sure that there is no disease of the spine when you see this, or when the tender parts of the spine are not painful in moving or in coughing or sneezing. And you may be quite sure, I believe, when a gentle blow or pressure produces more pain than a hard one, or when you find the same pain or flinching if the skin over or near the spine is pinched without pressing on the spine itself.

Again, the merely nervous pain is usually variable, though it may never be wholly absent; and its variations seem to be more dependent than those of real diseases are on disorders of distant organs, as the ovaries or uterus, the colon or rectum. In these variations the pain may seem paroxysmal, but I think it is not often so of itself.

Another usual character of this pain is its frequently extreme increase in fatigue, not only in bodily fatigue, as in long sitting upright or standing, but in long occupation of any kind, even in mental occupation if it is not very agreeable. With this character, also, it is common for the pain to be accompanied by nausea or even vomiting, and it is a nearly sure sign of merely nervous disorder if pressure on the spine produces shivering or nausea or a feeling of going to be sick.

And, lastly, it is a sign of nervous pain alone if the pain has lasted many weeks or months, and nothing has come of it; no immobility of the spine or ribs, no paralysis, no fever or wasting or great disturbance of th general health.

I think you may be sure that a patient in whom yo find all or most of these characters of pain in the spin has not spinal disease. But you will find many with pai like enough to this to excite suspicion, though not nearl like enough for conviction; many in whose cases th diagnosis must rest much more on other signs than o that of pain. Among these, let me warn you that th greater danger is that of thinking cases to be mimicrie of disease, or 'muscular' or 'only rheumatic,' when the are really serious organic diseases of the spine or of part within it. I will try to diminish the danger of bein wrong in either direction by mentioning some of the mor frequent groups of cases difficult of diagnosis.

The curvatures of the spine that occur frequently i young persons are often painless, are seldom very painfu and have no characteristic pain: yet pain of any kin should always lead you to examine for curvature, and t suspect, if there be curvature already, that it is increasin And the same rule should be observed with older patient for it is not extremely rare for lateral curvature to beg after middle age, nor at all rare for it to increase at an period of life. In either case there may be pain, fo which the spine should be often looked at for signs o disease more characteristic than the pain alone can be.

Aching spines are common in men with very nervous constitutions—in such as might be called hysterical with as much justice as many women are. Especially they are common in such men from thirty to fifty or more, and in women who retain their nervous or completely hysterical constitution to the middle or later times of life, and in whom, very probably, it is mingled with gout. There are far more cases of this sort in the cultivated classes of society than you are likely to suppose: men and women of mature or post-mature age, with spines whose nervous achings disable them from active life—at least from active bodily life; for in some of them the mental life is as active as if it really took their whole nervous force for its own use. They suffer severely, are painfully fatigued with exercise, have no comfort unless when they are lying down or reclining with their backs firmly supported; even slight manual work tires them: and yet in some of them the mind seems incapable of fatigue, or it only tells its fatigue in some increase of their spineache, or in feelings of nausea or vomiting. In many of these cases the diagnosis is not difficult: the nervous constitution is very strongly marked and, after months or years of weariness and ache, you find the spine as straight, strong, and pliant as ever.

And yet among these are the chief cases in which you must be on the watch, lest you overlook a really diseased spine; for, among elderly persons, you may not only, as I have said just now, find cases of beginning or increasing lateral curvature, but, occasionally, one of disease leading to angular curvature, setting in very insidiously like a case of nervous pain or chronic rheumatism. The first sign of this is, usually, a constant aching, which is sometimes even severe, fixed at one part of the spine, or radiating from it, or extending round the sides; and there may be some tenderness. But, chiefly, you may know them by the diminished mobility of the affected part of the spine and of the adjacent ribs. The patient holds the affected part of the spine as still as he can, when he turns or bends. If he coughs he does it carefully, and sneezing is very painful. If the dorsal portion of the spine be affected, the corresponding ribs scarcely move; if the cervical, pressure on the top of the head is often painful. After some few weeks of such pain, yielding of the spine may become evident. If the patient is the first to notice it, he feels himself stooping, or obliged to support himself with his hands, or not so tall as he was; and, when you strip him, you may find two or three vertebral spines projecting in an incurable angular curve.

These things, you see, are much the same as those by which you recognise the progress of many cases of caries of the spine in children and young persons, and I suppose that this disease in elder persons is of the same kind.[1] But I have not yet seen a fatal case, or one examined after death; and I have seen only one in which abscess was associated with the angular curvature.

You may make another group of cases from othe patients, in whom a strain of any part of the spine i followed by a very long-abiding pain. Some of thes will tell you that at the strain they felt, or even hear something crack, and that they have had pain an weakness ever since—aching, wearing pain, increased b exercise, or in certain postures. Here again I must advi caution, especially when the injury is recent. In a lar majority of these cases, the long-abiding pain and oth signs of spinal disease may be referred to the same ne vous mimicry as we see in those whose sprained knees or ancles remain for weeks or months painful and weak, yet without disease. But in some the pain continues because, as may happen in an injured joint, the injury has been followed by inflammation; and this may be of serious form. The pain alone will not prove it; but you may be afraid of it if the pain be felt not only in the spine but in the sides and abdomen, as if in a zone extending round from the painful part of the spine; or if with pain you find diminished mobility of the spine or ribs, great pain in coughing, greater in sneezing; and much more afraid when you find occasional or constant fever, and loss of weight and general strength. In short, for the diagnosis between the real and the mimic diseases following injuries of the spine, you may study by the rules which are more easily learnt in the similar affections after injuries of the joints.

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[1] See *Essay on Senile Scrofula.*

It is happy for our need of diagnosis that the impairments of the mobility and strength of the spine are more significant than its pains. The spine or any part of it, when really diseased, is often stiff and weak, though other signs of disease are absent or ill-marked; in the mimicry the mobility is often perfect, though other signs are vehement.

Fixity of the spine or of any part of it is extremely rare in any nervous mimicry. I will not say that it is never seen, but it is so rare that when you find a patient carefully—not with muscular spasm, but with care—holding his head and neck or any part of his back very still, turning himself or bending cautiously, anxious not to cough or sneeze, and very careful when he must, then you must look for disease of the spine. There may b muscular rheumatism, lumbago, or inflamed cellular tissue or abscess, or whatever else may give pain in moving but there is not likely to be only a nervous mimicry o spinal disease, and there may be the reality.

This fixity of spine is the more significant of rea disease the less the attendant pain. Still more so is i when the ribs connected with the suspected and stiff par of the spine are also motionless or too little moved i breathing, and when the breathing is chiefly diaphragmatic. There may in this case be disease within the ches —perhaps the pleurisy that is often associated with acut inflammation of the dorsal part of the spine; or it ma be chronic rheumatic arthritis of the spine, or a conditio associated with osteitis deformans; but it is very nearl certain—as certain, I think, as any diagnosis of unseen disease—that there is not a mere mimicry. Wheneve you are told of 'spinal irritation,' 'hysteric spine,' o whatever else an unreal disorder at the spine may b named, look carefully to the mobility of the spine an ribs; if it is impaired, look much further before yo venture to conclude that the malady is only nervous.

The very opposite state of the spine, in which it is a limp, so that when the patient tries to sit up, he, or mo often she, bends or tumbles this way or that, like a bab is nearly certain to be without organic disease. The may be real paraplegia; if there be not, you may belie the weak tumbling spine is in itself healthy, though may contain an idiotic spinal marrow; as a good sk may hold very foolish brains.

A feeling of weakness or giving-way at one part the spine is ambiguous. It is often complained of in neuromimesis; but it is also often present in carious or other real disease of the spine. It must always be considered likely to be a grave symptom if the patient habitually, and almost unconsciously, helps to support the spine with the hands or elbows as he sits. Of course this self-supporting posture may be either unintentionally or on purpose imitated in a nervous mimicry; but it so often has a real meaning that it must not be made light of, unless all other evidences of mimicry are clear.

You will often find that with this weakness of one part of the spine there is some distress in moving it. The patient does not willingly rise or turn in bed, and if he walks he does it slowly, often stooping or leaning forward, going stiffly or shuffling, not staggering or unsteady unless the spinal marrow be involved in the disease. This sign is, I think, less rarely mimicked than the last; the two together are weighty evidence for real spinal disease, and if defective movement of the ribs be added you had better believe that the spine is certainly diseased; whether with struma or rheumatism, or whatever else.

The other leading sign for the diagnosis between real and mimic diseases of the spine is in its shape. Is it misshapen, wrongly curved, or in any way deformed? If so, it probably is or was really diseased; and yet even here is room for error.

An angular curvature of the spine—I mean such backward outstanding of one or more vertebræ as is due to thinning or loss of substance of their bodies or intervertebral discs—is, I believe, quite inimitable by any nervous or muscular condition. But in not a few persons you will find that one or two vertebral spines naturally project a little, or are placed a little on one side of the exact line or curve in which they should be. This is most often seen in the lower dorsal and lumbar part of the spine; but it is so little like disease that it would be unnoticed if spineache or some fright about curved spine did not call attention to it. I think you will seldom have any difficulty in distinguishing this natural error from any effect of disease.

A lateral curvature of the spine may be imitated by disorderly muscular action; not, indeed, perfectly, yet near enough to be often deceptive. Spasmodic wry-neck is well enough known, and may imitate the distortion of considerable disease of the cervical part of the spine. Lateral curvature of the dorsal and lumbar parts from similar muscular disturbance or from twitching, like chorea, is much rarer, but you may expect to meet with it; and you may often detect the mimicry by noticing that the curvature has formed very quickly or even suddenly, and has become marked or extreme in so short a time as could not have sufficed for a real lateral curvature. A few days will make an imitation-curvature stronger than as many months will make a real one. Besides, the mimic curvature is not a perfect likeness. It is sometimes single, though very marked; real lateral curvatures, if very marked, are at least double; and the vertebræ are little or not at all rotated, as they are in well-marked real lateral curvatures. If these signs of distinction are not enough, you may often find that the spine will become straight and the back symmetrical if you make the patient stoop so as to touch the feet with the hands. In more difficult cases ether or chloroform will help. You can straighten the mimic curvature when the muscles cannot act; you cannot so straighten a real curvature.

Other deformities of the spine may be imitated by hysterical and other such persons. The spine may be rotated without curvature, or drawn to one side, so as to go-up obliquely from the pelvis; or in those with very weak limp spines there may be, when their trunks should be erect, an appearance of an uniform posterior curvature. But I believe you may easily detect the mimicry in all these. Most of them are extravagant, going beyond almost any real deformity of the kind that such a patient could have; and, almost always the wrong may be righted by putting the patient in some unusual position, as lying very flat on the back or front, or with the hands touching the feet, or hanging on a swing. By these, or the like means, you may out-trick the trickery of the muscles.

One thing more: you will often be consulted about irregularities of the scapulæ. Lady-mothers are always watching their daughters' shoulders (happily for sons, their shoulders are neglected), and any unlikeness of the scapulæ, such as one being higher, or further back, or smaller, than the other, is an alarm of curvature of the spine. The alarm is usually premature or false. A difference between the scapulæ may be due to muscular trick or awkwardness, or overwriting with the shoulder pushed up, or any of several other things; but if you cannot see in the spine or ribs some wrong curvature, rotation, or other mis-shape, the position of a scapula does not prove it. Still, these and the like cases are often hard to advise in, for the higher education of girls is apt to promote all those things which are favourable to the production of both real and mimic diseases of the spine. Wearisome mental occupation; long writing, with the spine twisted and the shoulder thrust up; long upright sitting, fatiguing drill and calisthenics; denial of most natural exercises, and of rests at will, or in any easy posture which is thought ungraceful—these and the like things in the education of girls are equally favourable to the development of the nervous constitution, and to the production of various backaches, and to the deforming of the spine. You must do your best in all such cases to discern what is real, and what is mimic. I can give you no general rules about them.

In trying to teach the diagnosis between the mimic and the real diseases of the spine, I have purposely spoken of only those signs which are usual in the early stages of the real diseases, for it is only in these early stages that the diagnosis can be difficult. A well-marked unalterable deformity of the spine leaves no question about mimicry, unless it be about the nature of some accompanying pain. The appearance of swelling, like a chronic abscess, by the side of the spine or in the groin may not make you sure that the spine is diseased, but at least it answers any questions about mimicry; and so do hectic fever, and habitually high temperature, and constant wasting. These things need no teaching: but I must speak of one more set of symptoms—the paralytic, the losses of sensation, or more frequently of muscular power in the limbs,—which may be associated with diseases of the spine. I must refer to them, though I believe they very rarely give help in diagnosis. For paralysis due to disease extending from the spine to the spinal cord is rare, except in the later stages of disease, and of these the evidence is clear enough without the paralysis. And when paralysis happens in what you may suspect to be the beginning of disease of the spine, it will very seldom help you, for you cannot tell that which is due to disease commencing in the spine from that which is due to disease commencing in the cord. And, lastly, if you are suspecting a mimicry of disease of the spine, here, again, paralysis may not help the diagnosis, for itself also may be mimicry.

Thus your only surety for right diagnosis between real and mimic affections of the spine is in the examination, first, of the spine itself, and then of the patient's constitution, and in a constant belief that there are some cases in which the diagnosis is very difficult.

LECTURE VI.

NERVOUS MIMICRY (NEUROMIMESIS) OF TUMOURS.

I SAID in my first lecture that I should treat of nervous mimicry from only the surgical point of view. From even this limited view many things may be seen which I must omit, as mimic paraplegia, mimic tetanus, mimic aphonia, and others. Concerning these you may find guidance to diagnosis in the best works on Hysteria. I will take now a set of cases that have been much less written of—the nervous mimicries of tumours. Of these there are three principal forms: the muscular or phantom tumours, the imitations of aneurisms, and those of cancers.

In what are called phantom tumours the imitation is due to the swelling of part of a muscle during contraction. This part, swelling and becoming harder than the rest, feels something like a smooth round or oval tumour or cyst placed in or between the muscles. The rest of the muscle feels natural, whether relaxed or contracted. In the contracted state the apparent tumour is most distinctly felt; in the relaxed it may be nearly concealed, as if sinking in the muscle.

This condition is altogether a strange one—not imitated, so far as I know, in any other state of muscle, unless it be in crimping, or in the flickering and passing contractions of dying muscles, or in the lumps

hich, it is said, may form in those that are struck
on after apparent death in any acute fever. If it may
e compared with anything in living muscles, it may be
ith cramp which draws them into knots or lumps; but
here is no pain in phantom tumours as there is in
ramp. Whatever it may be, the condition seems due to
rroneous nerve-force in the muscle; for one form, the
phantom tumours of the abdominal muscles, is most
frequent in evidently hysterical women, and in other
cases that I have seen there was certainly an abnormal state
f the nervous system, and in others it was very probable.

Three cases which I chanced to have seen lately may
llustrate the disease.

In one, a gentleman about sixty years old came to
e for a tumour, as he thought, in his right calf; and I
und in the mid-substance of his gastrocnemius what
emed to be a roundish smooth lump, nearly two inches
diameter. While examining it I seemed sometimes to
se it altogether, as if it slipped away or receded into
e depths of the calf: and then, after a time, I con-
nced myself that it had no real existence as a tumour;
t it could be put-out by friction, or by complete re-
ation of the muscle, or in some postures of the limb.
seemed due to defective or disorderly nerve-force in
muscle; for the patient had been slowly becoming
feeble in his lower limbs, and had the slow, short-
ing, shuffling gait, and weak, monotonous voice and
ar speech, which, I suppose, betokened senile de-
acy of nervous centres.

e second case was that of a clergyman, about
who came for weakness of the lower limbs and

frequent falling, which he was disposed to ascribe, in some measure, to a 'lump' near his left knee-joint, and another, less prominent, near the right. His calves were very large and muscular; his thighs small and weak;[1] and the lumps were swellings of the lower ends of the internal vasti, when, with the other wasted and weak muscles of the fronts of the thighs, they contracted. They did, indeed, look something like smooth oval cysts by the knees; but they subsided so quickly and completely when the action of the muscles ceased, that there was no difficulty in seeing what they were. And here, too, was nervous defect.

The third case was that of a lady about sixty, who had had a tumour on or over her left parotid. This had been removed about eight years before I saw her, and in the operation the facial nerve was injured, so that the left facial muscles were partially paralysed and subject to occasional twitchings during emotion. In the last year there had been a renewed superficial growth over the parotid, and with this an increase in the facial twitches. But what much more alarmed the patient was the appearance of a tumour, as she thought, below the left clavicle. This was the clavicular portion of the pectoralis major, partially contracted and hard, and perhaps made irritable, or more attractive to the alarmed attention, by the frequent twitchings of the platysma. All appearance of tumour was spoiled by raising the arm above the head; when the muscle was completely relaxed it all felt as soft and natural as its fellow.

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[1] In some of its features this case resembles the pseudo-hypertrophic muscular paralysis of Duchenne.

This last patient was over-sensitive and excitable, and probably augmented the disorderly action of her muscle by her too careful attention to it. The direction of the mind alone may, indeed, suffice to make, in some persons, a distant imitation of a tumour in a muscle. I once saw a gentleman who was possessed with the fear that he would die of psoas abscess because his brother did; and, for a day or more, he was constantly pressing his abdomen towards the psoas by the spine, till a part of his external oblique abdominal muscle had become so irritable that it hardened and swelled at every attempt at pressure and felt something like a tumour. All this ceased when it was completely relaxed by posture. But in ordinary cases the mind seems to have nothing to do with the phantom. The first two cases were in very ordinary gentlemen, and mental influence could not fairly be assigned as any reason for their mimicry of tumours.

There should be no great difficulty of diagnosis in the ordinary cases of this kind. A real tumour that lies deep in or beneath thick muscle may be pressed down beyond clear touch when the muscle contracts and hardens; and it may be difficult to feel the boundaries of a venous tumour or nævus in a deep or thick muscle. But these things will not mislead you if you will study the case long enough to be clear as to the inconstancy of appearance. If in one minute an apparent tumour is under the fingers and in the next minute is gone; if it shifts from one part of a muscle to another, as one set of fibres after another contracts; if it wholly disappears when the muscle is long relaxed,— this is a phantom, a mere mimicry of a tumour.

There is rather more difficulty in some of the cases of phantom tumours which occur in the abdominal muscles of hysterical women. These are sometimes large, hard, and more nearly fixed in place, size, and form, than those in the limbs, and they may be deceptively complicated with disorderly states of the intestines, or the aorta, or other abdominal or pelvic organs. But in any case, however difficult of diagnosis, ether or chloroform will bring all the help you need. With complete insensibility and muscular relaxation all signs of tumour disappear—the phantom vanishes.

Let me tell you the most striking case of this kind that I have seen. It was in a healthy-looking woman, about thirty years of age, in Sitwell ward. I admitted her for a tumour in the upper part of the abdomen, behind, as it seemed, the first division of the left rectus abdominis muscle, but larger than that seemed. It was roundish, firm, nearly hard, constant in its characters and place, often painful, and distinctly pulsating, like an aneurism. A light bruit was audible in it. Of its history I only remember well that there was nothing to help in diagnosis. In full medical and surgical consultation with my colleagues, the questions were whether there was a tumour with pulsation communicated from the aorta, or an aneurism. If a tumour, where, or in what? If an aneurism, of what artery? The opinions were many and various, partly, perhaps, because the examination was painful and, therefore, possibly, incomplete. So one day I gave the patient chloroform, and the tumour, the aneurism, and the doubt dispersed; they were all phantoms.

This case, in which an abnormal nervous condition of a muscle and of the abdominal aorta appeared to be combined, may lead us to the next set of mimic tumours—the imitations of aneurisms by what I suppose to be abnormal nervous conditions of arteries. The evidences of this condition are, indeed, not complete; but, at least, the mimicry of aneurism is more frequent in persons of nervous constitutions than in any other. It is sometimes associated with well-marked hysteria, and the likeness of aneurism often varies according to the state of the patient's nervous system.

This mimicry is most frequent in the abdominal aorta, in which it has often been described as a nervous abdominal pulsation; but, so far as I know, it is not described as occurring in the subclavian, innominate, or carotid arteries, though in these it is not very rare, and sometimes is not easy of diagnosis. The chief characteristic of the mimicry is that the affected artery feels much larger than it should be, and pulsates largely at least in one direction, dilating obtrusively, and often so much more visibly than in an ordinary person that it is hard not to believe that it is largely dilated. And yet there certainly is no considerable dilatation; it is rather as if the arterial walls were thin and had too little muscular resistance, as we might suppose them to be in a condition of partial paralysis of their muscular tissue. In the most marked case of imitation of abdominal aneurism that I have seen, examination after death found no disease. A lady of very nervous constitution had suffered severe sea-sickness in a passage to Ireland. The sickness scarcely ceased during her stay there, and was aggravated on her return-voyage, after which she continued vomiting nearly all her food, till, at the end of some weeks, she died exhausted. During these weeks there was so large and strong a pulsation in her abdominal aorta that some were convinced that she had abdominal aneurism. As she lay on her back one could see the artery pulsating behind the abdominal wall. It raised the hand laid on it, thrusting up the fingers with a firm throb and a thrill, and a low but distinct blowing was audible when the stethoscope was lightly pressed on the artery. Yet there was no aneurism. After death the artery was found absolutely healthy in both size and structure.

I say again, I do not know what is exactly the state of the arteries in these cases. There are few opportunities of examining them after death; and I have heard of none that told more than the one I just now mentioned to you. But, clinically, these cases are well marked. The artery feels large, wide, and full; but soft and compressible, or even, if one may so call it, puffy, without any of the hardness or stiffness felt in aneurisms. The pulsation is full, but rather soft, like that of an artery in the reaction after large loss of blood; and, (which is chiefly characteristic of the absence of dilatation or aneurism,) the extra-full pulsation is in only one direction. There is no unusual lateral dilatation; the too-much throb is only forwards; and, if the patient sits upright or leans forward, the pulsation may seem to cease.

The likeness to aneurism in these cases is sometimes greater than could well be expected; for many things besides the excess of pulsation may contribute to it. In the abdominal aorta an unusual appearance of prominence

r be given by an unusual anterior curve of the lumbar
ebræ; and by thinness, with concavity of the abdo-
al walls, and emptiness of the stomach. Hardness or
ghness of the pancreas, or of lymph-glands about the
a, may yet further increase the likeness to abdominal
irism.

In like manner, the imitation of subclavian aneurism
iade more marked when a nervously pulsating sub-
ian artery has glands beneath or about it; and still
e when it lies on a cervical rib, and is somewhat
ed and, I suppose, widened. And the imitation of
er carotid aneurism is added-to by the very bulbous
i of the first portion of the internal carotid and its
sionally tortuous course. That of the lower carotid
irism may be augmented by enlargement of an over-
g lobe of the thyroid gland.

With all these helps to difficulty you may sometimes
troubled in the diagnosis of a mere nervously pul-
ig artery. In nearly all the cases I have had to see
irism was suspected; but a few rules will ensure
nst error. The nervous artery has no lateral expan-
; it does not open the finger and thumb when they
ally compress it lightly; you can trace the straight
of its sides; in the abdominal aorta the pulsation is
or nearly lost, when the patient sits leaning forward;
ie other arteries, by relaxing the parts over them.
ays the artery has at least its natural softness and
pressibility; commonly it has more. There are no
xysms of pain; and if the case has been watched for
ths, or even years, there is little, or more often no,
ase of size. On the other hand, the extent of artery

which may feel dilated may much increase, so that we may see and feel, for instance, an abnormal throbbing in the innominate, carotids, and subclavians of the same patient—a state unheard-of in aneurisms.

Before leaving this subject, I just mention to you the cases in which you will find, in certain patients, anæmia, enlarged thyroid gland, protruding eyeballs, and pulsating carotid arteries. The study of these cases might clear the obscure pathology of the mimic aneurisms; but with this I am not occupied, so I leave them, and go-on to the last set of tumours that I have to speak of.

It may seem absurd to say that cancerous tumours can ever be imitated by any nervous disorder; and, indeed, they cannot; yet you will find few cases requiring a more positive diagnosis than those in which you will have to assert, as beyond all doubt, that a patient has not cancer, but neuralgia.

The cases in which the diagnosis is most often necessary are those of suspected cancers of the breast and of the tongue. Of course any part may be similarly suspected; but, taking all other parts together, they would not supply, at least in surgical practice, so large a number of cases of suspicion as these two.

For the breast, the usual case is that a patient complains of all the pains commonly described as characteristic of cancer. She has dull, aching pain, it may be, [illegible] the whole or some part of the breast, and often the pain extends down the arm, more often goes right through to the scapula; and sometimes it is a darting, lancinating pain, shooting this way or that, or burning. I think that you will not find any pain of cancer of the breast which

ll not be described by patients with this neuralgic
micry of the disease.

But, however severe the pain, and however like what
supposed to be characteristic, your diagnosis may be
ar. That is not cancer which you cannot feel. Cancer
a growth, not any kind of pain, and indeed in its early
ges seldom attended with pain; so that when pain is
ongly marked, and it is very difficult, or impossible, to
l any tumour or 'lump' in the breast, you may be
rtain that there is no cancer.

In most of these cases the pain has an entirely mental
igin. The patients have been seeing or hearing of
ncer, and their minds have been filled with thoughts of
pain and misery of the disease, till the idea has gene-
ed sensations like those from which it was derived.

I have said 'the mind has been filled;' but this is
necessary. I have known these pains mimicking the
ns of cancer in persons who had indeed often thought
ancers, but never intently, or with any sustained fear.
t as one may, in dreaming, have vivid impressions of
ects he has rarely, perhaps only once, seen, and scarcely
r thought of, so may these imitative pains be felt
nly and often in those who have seldom considered or
ed them.

In these wholly mental cases the confident assertion
your judgment will commonly suffice for cure. Some-
es, indeed, patients need repetition of the assertion,
ecially those who are hysterical. Their trust seems to
-out after a few weeks or months, and some of them
ther prefer the disease, or the pity to which it would
ve them a claim.

There are cases, however, in which the pain is not wholly mental. Neuralgia of the breast sometimes follows a blow. That which in ordinary persons would be followed by aching for some inconsiderable time is apt to be followed in the nervous by long-abiding pain, which the mind will invest with all the characters of what it supposes to be the pain of cancer. And, again, neuralgia of the breast is not rare in gouty or otherwise 'painful' persons, and most of these are ready to fear that their pain is due to cancer, and to endow it with the characters supposed to be distinctive. As fear can give to any harmless form the shape and substance of that which it most dreads, and can see spectral terrors in a scarecrow, so can it give to ordinary neuralgic pains any of the characters of the pains of cancer. It is especially prone to do this when the neuralgia is felt in a part notoriously liable to cancer. In this part fear will make pain cancerous, even while neuralgic pains, quite as severe, are common in other parts of the body, and in them are regarded without dread.

The diagnosis is more difficult when, with the pain described as like that of cancer, there is, or appears to be, some change of structure of the breast; for a very nervous patient may endow any mammary disease with any form of pain.

In these cases—which, however, are far more rare than those of neuralgia without change of structure—you must make your diagnosis on the characters of the tumour itself, if there be one. But be cautious about one or two fallacies. Many neuralgic breasts are a little larger than their painless fellows. But mere largeness is not tumour, uch less cancer. And many mammary glands, whether uralgic or not, are rather firmer or tougher in one part an in others; and when the tough part is grasped, and, it were, doubled between the thumb and fingers, it ay feel something like a hard tumour. Let me advise u not to use this mode of examining a mammary gland. have known it often fallacious, never useful. If you nnot feel a tumour by feeling or pressing over and und it, you may believe there is not one; you may be rtain there is not a hard cancer.

And if you can feel a tumour, do not believe it to be ncerous merely because it is painful. Judge by what u can feel, not by what the patient feels; remembering ways that in the early stages of cancer of the breast, in ich alone there is any difficulty of discerning it by tangible characters, it is rarely very painful. All the pular ideas of the pains of cancer are derived from the ses of advanced disease, or of cancers growing rapidly inflamed or ulcerating. In early cases, and in nearly in which the diagnosis is obscure, the greater the pain e less is the probability of cancer. And, let me add, uralgia, even of the severest kind and longest duration, es not tend to cancer of the breast. I must have seen re than a hundred cases of neuralgia, and I have seen ly one in which it was followed by cancer, and I have belief that in this one the sequence was a consequence.

Most of what I have said of the breast might be plied, with change of name, to the mimicry of cancer the tongue. Nervous people hear of the cancer, and n, with less or more of thought about it, have pain l aching in their own tongues, usually at the side and in that frequent seat of cancer, at the junction of the middle and posterior thirds. Others have neuralgia of the tongue; a dull, heavy aching on one side of it—a condition which is far from rare in the habitually neuralgic, especially, I think, in the gouty—and these give to their neuralgic pains what they believe to be cancerous characters. And others, with dyspepsia, have sore tips or edges of their tongues, which they, too, magnify.

It is strange to observe the tenacity with which some of these patients cling to the most dismal view of their cases. Though nothing wrong can be seen or felt, and though months, or even (as I have known) years, may pass without any disease appearing, yet will they believe themselves on the brink of misery with cancer of the tongue. But your diagnosis may be as fixed as their fears and had better be more positive. That is not cancer which you can neither see nor feel. And do not be deceived by an unusually large cluster of papillæ of the circumvallate group, or by any little thickening due to irritation of a tooth, or by a fissure or psoriasis. A patient's fear will give any of these the sensations of cancer; but, as I said of the breast, so here, your diagnosis must be founded, not on the patient's sensations, but on your own. As observers from without, you must insist that you are better than the observer from within.

It is scarcely possible to write usefully on the treatment of a group of diseases such as those to the diagnosis of which these lectures are devoted. The central fact in every case, that is, the nervous mimicry dependent on a nervous constitution, may be constant; but everything around it may be, in each case, different. For the central condition there is no direct remedy; for some of the conditions around it there may be.

In each case it is well to consider that treatment has to be directed against at least three different things: the local symptoms, the constitutional condition which may co-exist or be combined with the nervous, and the nervous constitution itself. Each of the first two may be treated as it would be in other than nervous patients, provided the treatment will not do damage to the general condition of the nervous system.

1. Thus, for pain, general narcotics do more general harm than local good; they should not be used except under urgent necessity. A nervous patient who habitually or frequently takes any narcotic is usually, I think, past hope of remedy by anything but long time. Local soothing means should be always used, and are sometimes very beneficial, such as frictions with solutions of opium, aconite, or belladonna, or plasters with belladonna or opium. All such frictions should be preceded by spongings of the part with very hot water, so that the skin at the time of friction may be, as one may say, red-hot. And this hot sponging is, of itself, often very useful. Indeed, I have known nothing so good for the painful aching spines which are common in the mimicries of disease, as that the patient should sit in tepid water, and have the spine drenched again and again with water as hot as can be borne, and then warmly covered and rested. Such drenching with water wrung from sponges or cloths is better than the more forcible hot douches; they are apt to shock too much. Similar uses of hot water and of very hot poultices

are advisable also for joints and other parts imitating pains of real disease; and I believe it would be hard to find a case in which cold applications, whether lotions, douches, icings, or any other, are not mischievous. If I were to make an exception, it would be, doubtfully, for the occasional use of the ether-spray-freezing in an intense neuralgic mimicry.

For parts that are nervously, or by erroneous long rest, stiffened, contracted, or distorted, forcible movements may be used, as I have said in the last lecture, and in that on bone-setting.[1] Besides, speaking generally, such parts should be regularly exercised, up to any degree short of that which repeatedly produces exhausting pain or fatigue, or is not recovered-from after a night's rest. However little can be done without these or the like consequences, it should be done, though it be but the raising of a finger ten times a day. Generally, too, the use of nervously affected parts should always be for short periods, and frequent in the day; and after every time of exercise there should follow a much longer rest.

And this rule of long rest after exercise should be observed with the use of frictions, shampooings, douches, and other like things. Rest should follow them all.

Among other local means of treatment I think I may certainly say that local bleeding is always useless or worse; that severe counter-irritation, or any such as produces general feverishness, usually does harm, never does real good; that light and transient counter-irritation often seems useful, and may be very often repeated.

Galvanism is, I do not doubt, in many cases useful. Certainly, it is so in the cases of muscular inaction, ther the will-less or the power-less. But in the hap-ard way in which it is commonly employed it is some-es mischievous, and often useless, unless by its mental uence. Its real value is not likely to be gained with-a much more careful study than is usual.

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[1] P. 101.

2. I believe that any other constitutional condition y co-exist or be combined with the nervous, and may ke not only the diagnosis but the treatment the more icult. Whatever treatment is employed must have pect to each constitution. The scrofulous, the tuber-ous, the gouty, the rheumatic constitution may need atment as much as the nervous. It is through this at variety of conditions complicating the nervous order that so great variety of treatments are supposed ful. Many patients are anæmic, and iron does them d; some are tuberculous, and some scrofulous, and se need iodides, or cod-liver oil, or various tonics; e have lithic acid diathesis; some oxalate, and the edies that are useful to these may seem mischievous others. A single principle of treatment governs what y be said of all these and other complications: any or, whether local or general, which complicates the ntial disorder in the nervous system should, if possible, remedied; for every such error is to the nervous em as an irritant or disturbance augmenting its dis-er. Under this principle it is that in some of the es of nervous mimicry the treatment of some malady the uterus has seemed to cure the whole trouble; and some, constant purgation; in some, zinc; in some, enic or phosphorus. I know that in many cases all se things are useless. I believe that when they have

done good, it has been by the cure of something complicating the nervous disorder, which being removed left the nervous system able to recover of itself.

3. Then, lastly, for the treatment of the nervous system itself. There is no medicinal remedy, nor, I think, any medicine which can be said to be generally useful. Iron and zinc and various tonics often seem to do some good for a time, even in those in whom there is no evidence of such complication as I just spoke of; but they do not cure.

That which I think has always to be cared-for is the full nutrition of the nervous system, by means of right food, sleep, rest, warmth and other common things of life.

The food should be ample, nutritious, mixed. No cases seem to me harder to remedy than those of nervous patients who say they cannot eat. With many of them it is only that they cannot will to eat; with some that they have so long not willed to eat, that at last the desire and all sensation of hunger have ceased. But till they do eat, I believe that nothing will do good.

If there be cases worse than these, they are the cases of the patients who cannot eat but will drink. Those who reject all food, and yet drink stimulants often in the day—stimulants of whatever kind—have no chance of being cured. They may outlive their malady, but this is the best that can be hoped for.

As to what may be eaten or drunk, I believe that very few general rules can be stated. Large quantities of tea, and of coffee, and of sugar are, I believe, generally injurious to nervous patients, and much of strong tobacco-smoking; but for the rest, if any selection of foods needs to be made, it must be for other errors or defects of health more than for those of the nervous system.

Sleep and rest should be carefully arranged. As a ule, I think that nervous patients should sleep at least ight hours in the twenty-four, and they may sleep one r more in the day as well as at night. But I am dis- osed to think that even sleeplessness is less mischievous han the frequent or habitual use of narcotics. And whether with or without sleep all exercise should be followed by long-continued rest.

Warmth is always advisable—warmth of air and clothing and bedding. In some cases very fresh mountain air seems to have its full invigorating effect; but I think hese are only among such as can be active; others must kept warm.

But, perhaps, the most important part of the treat- nt of these cases is the mental part. I have referred the infrequency of commonplace minds among the tients with nervous mimicry—some being far above, ne far below, some in various ways divergent from, e ideal standard average. It would, probably, always ad to the remedy of nervous mimicry if the mind could brought to an average and uniform level, to a just edium of common sensibility and common sense. A w excellent and wise persons might be the worse for uch a change; but for all except these the change would be for the better and a chief step towards recovery.

Most of all, the will needs education in these cases. It needs to be trained to the cure of the mimicry, to the endurance of pain, to the control of movements, to the fixing of the attention on anything rather than the supposed disease. And very often, in the worst cases, this training of the will is not possible unless the patient be separated from the persons and things associated with the disease. Many patients cannot get well at home. Some of those about them are too sympathetic; some too hard; some yield too much or too soon: none are really helpful; and the patient's will becomes constantly more feeble, or more widely perverted. In conditions such as these the patient should live with quiet sensible strangers, who can teach the will and exercise and control it.

The effect of judicious education of the will in the worst cases of nervous mimicry is sometimes very striking; complete recovery is not rare, especially in cases of mimic loss of power in the spine and limbs, and of mimic diseases of joints, and mimic gastric disorder and apepsia. But the teacher must be carefully chosen; for among these nervous patients are some who are ready to become the very slaves of persons who have strong wills, or who profess that they are possessed of knowledge or authority that cannot or may not safely be resisted. Thus it is that the worst cases are sometimes cured by the most ignorant persons, who, by the mere confidence of their assertions, give confidence and will: but the consequences of such cures may be as bad as the disease.

THE TREATMENT OF CARBUNCLE.

ou have recently had the opportunity of seeing four ses of carbuncle treated in my wards after methods hich you would probably describe, if asked to do so, by ing that 'nothing was done for them.' Here are the tients' papers; and there is, to be sure, no medicine —down for them to take, and you know that no surgery as inflicted on them,—and yet a good deal was done for em, though the treatment was what does commonly ss by the name of 'doing nothing.' They were carely fed, washed, cleaned, and bedded; and their carncles were very skilfully dressed and washed with oper things; and every care was taken to shut-out all toward influences from them.[1] And if any complications their cases had arisen, these would have been imediately met. But no complications occurred; and herefore, the cases remained without treatment, as it is aid—that is, without medicine, and with no active surgery, o incisions or anything of that kind. And since all ese cases passed through their course very favourably, d all the patients were, or will be, discharged at a comparatively early time after their admission into the hospital, I will take this occasion of giving you some observations on the manner of treating carbuncle.

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[1] An unavoidable repetition of part of p. 147.

Although you may not have seen much of it, you must all have heard of the ordinary manner in which carbuncles were treated formerly, and still are by some; a method which consists mainly in making large incisions through them, and giving large quantities of food and stimulants, as well as considerable doses of quinine, bark, and other tonics. I do not at all mean to say that the things which in these cases I left undone would have done any harm; but what I hold of them is, that they would have been quite useless, and some would have been sources of great discomfort to the patients. And in the way in which I speak of these things you may notice that I exemplify that rule which I have always impressed upon you, of asking yourselves, when you seem to have been successful with some medicine, 'What would have happened if I had not given it?' The apparent consequence of giving a medicine may be plain enough; but you cannot too often repeat to yourselves the question—as a rule, I will not say of practice, but of the study of your own practice,—'What would have happened if this or that, which seems to have been successful, had not been done?'

First, with regard to the incisions made in carbuncles. The ordinary plan, still recommended by some, is, as soon as a carbuncle is seen, to make two incisions crucially from border to border. It is said that they must go even beyond the edges of the carbuncle into the adjacent healthy textures. I have not followed this method very often, but I have followed it quite often enough be sure that it does not produce the effects which e commonly assigned to it. It is commonly said that if u will thus make crucial incisions into a carbuncle, u will prevent its spreading. If you can find a carncle two or three days old and cut it right across in th directions, I think it not unlikely that you will event its spreading. But even therein is a fallacy; for re is no sign by which, on looking at a commencing buncle, you can tell whether it will spread or not, ether it will have a diameter of an inch, or of three, or ten inches. The question, therefore, that I spoke omes back, 'What would have happened if I had not de these incisions?' And the answer to that question l be rather according to temper than according to wledge. Habitual self-satisfaction will say, 'I saved t man's life;' self-dissatisfaction, 'I did him no good.' e true scientific temper stands midway, and says, 'I l wait for further information on the matter—till I e seen more cases, and then decide whether, in the liest stages of carbuncle, incisions are useful or not.'

After this time of three or four days I have seen a ficient number of carbuncles thus divided, and have ided enough for myself, to say that it will not hinder spreading. I have seen carbuncles spread in as large roportion of cases after incisions as in cases that have t been incised. I have in my mind a striking case t occurred to me early in practice, when I followed routine and, in a friend of my own, divided a carncle most freely. I cut it after the most approved hion in depth and length and width, and then it spread. ter two or three days more all the newly-formed part was cut as freely as the first, and then it spread again, and again it was cut as freely. Then it spread again, and was not cut. Then, in a natural time, it ceased to spread, and all went-on well. These are only general impressions that I give you, because one cannot count the cases in which cutting has been practised, and those similar cases in which it has not; nor even then could it be said whether those in which the cutting was practised would have spread if left alone. On a very strong general impression, however, I say that carbuncles will spread after cutting in as large a proportion of cases as they will spread in without cutting.

Then it is said that carbuncles are relieved of their pain if they are thus very freely cut. Here again, however, is only a partial truth. A carbuncle of two or three days' standing, which is hard, tense, and brawny, is very painful; and cutting it will relieve, in many cases, a considerable portion of the pain. But after this, when the carbuncle begins to soften, and when pustules begin to form upon its surface, and pus in its interior, it usually becomes less painful of its own accord, and without incisions. Thus there are two distinct stages of carbuncle in reference to the pain; the early stage, when it is hard and still spreading, and is generally intensely painful, and the later stage, in which that pain may nearly or quite cease.[1] A carbuncle divided in the first stage, in the first two or three days of its existence, may be relieved of some of its pain; if divided in the later stage, what little pain may exist is altogether unaffected by the cutting.

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[1] My friend, Mr. Crompton, of Birmingham, lately watching a carbuncle in himself, felt sure that the intense pain is pain of the dying tissue.

And even cut as you may, you cannot always cure the extreme pain that a carbuncle sometimes has, even to its later time. Some two or three years ago, I was called to a member of our profession with a large carbuncle in the middle of his back. His friends had been much alarmed about the state of his mind, for he had been suffering great mental anxiety for some time, and they were in fear lest the excessive pain of the carbuncle should, in his disturbed state, do his mind permanent damage. So they persuaded me to cut it, and I cut it after the old plan, very wide across, and far into the adjacent textures, as freely as could be. It did not in the least relieve him. I never saw a carbuncle through its whole course so painful as that was, and up to the last, till the healing was nearly completed, he suffered more or less pain in it. So that the conclusion in reference to pain must be this: if a carbuncle can be divided in the first three or four days, while still hard and brawny, it may be relieved of some measure of the suffering; at a later period incisions have no influence at all.

The third point is stated thus; that by the incision of carbuncles you accelerate their healing, giving facility for the exit of sloughs. But herein is the greatest fallacy of all. When the cutting of carbuncles was more customary in this hospital than it is now, when I did not cut them, and some of my colleagues did, I used to be able to compare the progress of cases cut and of cases uncut, and time after time it was evident that the cases uncut healed more readily than those cut. A man who is now in the hospital I have brought round here that I may illustrate this point to you. This is the man, Timothy C——, aged fifty-five. When he came-in his carbuncle had a length of more than six inches and a breadth of three and a half; and it formed the ordinary hard, compact, tense, and brawny mass that a carbuncle usually does. It had at that time already begun to suppurate, and little pustules were pointing on the surface. If I had followed the practice of incisions, I should have had to make a cut in one direction of about seven inches, and in the other of about five, and after that I should have had not only the wounds wide-open and gaping and having themselves to heal, but a great part of the substance of the carbuncle fully exposed, and also under the necessity of healing. But you will observe that the whole of the space that now remains unhealed is a series of openings in the middle of the carbuncle, through which nearly the whole of the sloughs have already been discharged, and which now remain merely like the cavities of little abscesses. In this way you narrow greatly the extent of wounded surface to be healed. Indeed, it by no means always follows that the whole carbuncle, or its whole base, sloughs. Carbuncles, if not divided, not unfrequently suppurate only about their centres, and slough only in their central parts, and the borders clear-up by the softening and dispersion of the inflammatory products in them. In every case of this kind you save greatly the amount of healing which has to be gone through. Nay, in some cases carbuncles completely abort. One of these cases, of which I have the paper on the table, was that of a woman aged sixty-four, who came-in with a carbuncle nearly as large as this man's in a condition which, it might be said, required incision at once; but, with the exception of two or e small points, no suppuration or sloughing ensued. e carbuncle dispersed, aborted, cleared away. This n's case shows the more ordinary course of events— sloughing of the central part, the gradual discharge the sloughs, and the comparatively small spaces which left in the centre of the carbuncle as the sole spaces which healing has to be achieved.

On these three points, which are the grounds that re been assigned as reasons for cutting carbuncles, I e now given you the evidence on which I have ceased m the practice. I fully believe that crucial incisions not prevent extension; that there is only a limited set cases in which the incisions diminish pain; and that h regard to the time that is occupied in healing with without incisions, the healing without incisions is very arly and certainly the quicker.

The incisions that I have been speaking of are those de on the old plan; crucial incisions. Another method ich I have occasionally tried, but of which I can only te the same general results, is that of subcutaneous ision. This has been supposed to have the same eral effect as the other; and I think that the same eral conclusions may be drawn respecting it: that it measure unnecessary in the treatment of carbuncle, l that it retards rather than hastens the healing. en I speak thus of the incision of carbuncles, however, lo not mean to say that there is no condition of buncle in which an incision may be useful. Somees a carbuncle sloughs in its central part, with one tinuous slough of integument holding-in a quantity pus. In that case you should cut through the slough, or through any adjacent part of the carbuncle, to let out the pus, as you would open an ordinary abscess. But this is not a measure which is commonly understood by the 'incision of a carbuncle.'

If you ask why you may not cut a carbuncle though it may do no good, I reply that you should never be actively useless, and that there are some cases in which the cutting does considerable harm. Carbuncles, for the most part, occur in persons broken-down in health, exhausted by overwork, or by bad food, or in deteriorated general health—as sometimes in diabetes or albuminuria; and in all these persons it is a good general rule to save the blood they need for healing. The loss of blood from the carbuncle itself would not be considerable; the hard substance of the carbuncle, when cut into, does not bleed, or bleeds but little. But to carry out the incision perfectly, you have to cut into the adjacent healthy texture; and this sometimes bleeds very profusely, so as to lead to all the distress and pain of plugging the wound with this or that substance to arrest the blood.

Another measure which is supposed to be necessary in the treatment of carbuncles is very high feeding with large quantities of stimulants. I learned the opposite of this in one of those cases which you will always do well to study—those, namely, in which the patient refuses to do what you advise him. It is from such cases that we may often learn what is commonly called the natural history of disease, its course undisturbed by treatment. A gentleman, eighty years of age, had a carbuncle as big as it could be on the back of his neck; it extended om one ear to the other, and from his occipital spine to he lower cervical vertebræ. He measured it for his own musement, and it was fourteen inches over its surface ransversely, and nine inches vertically—a carbuncle, hen, of the largest size, and one, it might have been upposed, attended with considerable risk to life. I rged him very strongly to take a large quantity of what called 'support,' for I was at that time under an pression of its necessity. He absolutely refused, and thing would induce him to take it. I was therefore ntent to stand-by and study the natural history of ease in this huge carbuncle; and the natural history it was a history that one would have wished to witness every carbuncle of its size, for no case could pass rough its course in a better method. He led his dinary abstemious life, took moderate quantities of food d of stimulant, lived through a carbuncle of the greatest verity, and finally made a complete recovery, and lived r several years.

Another case which impressed me very much was at of a friend of my own in the profession, who had a rbuncle on the back of his neck of very considerable e. Sir Benjamin Brodie and Mr. Stanley attended him ith me, and under their advice the carbuncle was cut. watched its course afterwards, and felt sure that the tting had done neither good nor harm. It went on as rbuncles do when not cut. But the patient was subject intense headaches, of which he knew by experience hat the only possible remedy was almost entirely to eave-off food, and absolutely and entirely to leave-off stimulants. One of these headaches occurred during the course of the carbuncle, at a time when we had put him upon very full diet and abundant stimulants. He said then that he must leave off his stimulants and food, and we looked with some alarm at what would be the effect on the progress of the carbuncle. I remember Mr. Stanley saying to him in his distinct manner, 'My dear fellow, if you don't take food you'll die.' 'Very well,' he said, 'then I will die, but I will not take food and increase my headache.' According to his own wish, therefore, we reduced his diet to a very low level. The course of the carbuncle was not affected at all, unless it were for good; and after three or four days of this, which might be called comparative starvation, he described himself as being 'as jolly as a sand-boy.'

Since that time I have watched carefully all cases that I have seen, and I am certain that there is no good to be obtained by large feeding or abundant stimulants in ordinary cases of carbuncle. The whole of these cases that have lately been in the hospital were put on our ordinary meat diet, with a pint of porter daily; and I see that two of them have had four ounces of wine a day, one of these being a person aged sixty-four and the other sixty-three, and both having carbuncles of considerable size. You will find that for patients in private life it will do very well if you tell them that they may have about two-thirds of their ordinary amount of food, and about the same proportion of their ordinary quantity of stimulants. But indeed there is scarcely any reason to change in any material degree the ordinary mode of life of a patient with carbuncle. So far as he can with comfort take that to which he is accustomed, so far he may. If diet has been habitually low, so it may remain; if tually high, so, within certain limits and somewhat ced, it may still remain.

Now you may ask what I should set down as the gs to be done for a carbuncle. These boards, nearly as they are, may tell you. In local treatment one he best things you can do, if the carbuncle is small, is over it with emplastrum plumbi spread upon leather, a hole in the middle through which the pus can de and the slough can come away. That, occasion- changed, is all the covering that a small carbuncle need. It is difficult thus to cover the whole surface large carbuncle, and to keep it clean; therefore, I k that the best application is the common resin- te which may, in some cases, be diluted. This should pread large enough to cover the whole carbuncle, over it should be laid a poultice of half linseed-meal half bread. And, if you want to exercise your skill, n to make the poultice well, and to put it on well, to keep it in its place well, and see that it is put on hot, and changed before it is cool, and that at every nge the carbuncle is fomented with very hot water.[1] mode of dressing the carbuncle, so far as the ma- als are concerned, will last through its whole course; whilst the carbuncle is making progress and dis- rging its slough, you will find plenty of room for the rcise of considerable skill in dressing it, and filling up cavities with soft substance spread with this ointment. ides this, the carbuncles are to be carefully washed, cially with some deodorising substance, as Condy's fluid, or very diluted carbolic acid, and the cavities may be syringed-out with it. The importance of cleanliness is very great. You noticed in the man whom I showed you just now the boils and spots of acne around the edges of the carbuncle. This points out the necessity of care, which I suppose had not been taken here, to keep the surface of the skin adjacent to the carbuncle perfectly dry, and free from any contact with the discharge, which seems really to have the power of infecting the neighbouring skin, and so producing the boils which are apt to arise, sometimes in clusters, around the carbuncle. Of diet I have already spoken to you. Of medicines I say nothing. Quinine, bark, and other medicines of the same class, may be given if you please, or in case of evident need, and so may aperients; but there is really no need of them in an ordinary case of carbuncle. But there is one medicine which you may find very valuable, and that is opium, especially in all the earlier painful stages of carbuncle, in which it relieves the suffering more thoroughly than incisions or anything I know. After the early stages, even opium is unnecessary, except for some patient who may be unable to sleep.

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[1] This, of all things, Mr. Crompton assures me, gives most comfort.

But there is one measure in the treatment of carbuncle which is seldom employed, yet is of great importance, namely, letting the patient have very free air. The general idea that carbuncles are very dangerous diseases has commonly led to the patients being entirely confined to bed and kept shut-up in their rooms. This is an unnecessary care; as I learned from a patient who refused to comply with injunctions—a patient with a large carbuncle on the back of his head who would not eep in his bedroom. He had been accustomed to an tive life, and after seventy or eighty years of that cus-m he was quite indisposed to remain in his room. So ith his carbuncle he daily came down stairs, changing s room and moving about the house as well as the pain d weakness would allow him. No carbuncle could go n better; all the stages were passed through without ny risk or trouble, and it healed with unusual speed.

After that I had a yet more striking case. A lady ame to London 'for the season,' as she called it; and he had not been here more than a week or ten days efore a carbuncle came on the back of her head, just nder her hair. It would have been a great vexation to er to give up all her amusements; and so, as she did ot mind the pain, she would go out. And it was then at, for the first time and the last, I saw any value in a chignon.' She dressed her carbuncle under her chig-n, and she went to the parks, to the theatre, and to nces unharmed, and with her carbuncle quite unseen, d no trouble whatever followed. It healed after the dinary fashion in about the ordinary time. But, in-eed, you may see cases of this description on a much rger scale if you watch the carbuncles that come to us n the out-patients' room. There we often see them of onsiderable size, and they do as well among the out-atients as among the in-patients; and yet these out-patients are freely in the air all day, and many of them continue at their work. So you may set it down as one point to be attended to in the management of carbuncles that patients should not be confined to their rooms. They should at least have change of air in their own houses;

and, unless they are very weak, they should not avoid exposure to the fresh open air.

Treating your cases of carbuncle upon this plan, I believe you will find that the great majority will pass through their course well. I cannot tell you what the ordinary proportion of deaths from carbuncle is; but I know that carbuncles are commonly looked-upon in the profession as dangerous things, and a large carbuncle on the back of the head is considered to be fraught with risk to the patient's life. But that is very far from being the case in my experience. Remembering, so far as I can, or rather guessing at the number of carbuncles I have had to treat, I should say that there is no other disease of the same extent and general severity which is attended with so little risk to life. During twenty years of hospital- and private-practice, I cannot have treated less than 200 carbuncles; and of these 200, four have died, giving a mortality, at a fair guess, of only two per cent.—a mortality which is less than that of some of the minor operations of surgery, and really less than that of any disease of equal severity that you can name. Of those four deaths, one occurred in a patient aged seventy-eight, who died of erysipelas after the carbuncle had nearly healed. Another patient was a gentleman fifty-five years of age, who died of chronic pyæmia. The third was a gentleman aged fifty, who died with acute pyæmia. And the fourth was a patient of about fifty years of age, who died rapidly exhausted. The first three deaths were from causes which may almost be called accidental; for so we call them when occurring after an operation, and it would be unreasonable to suppose that any other method of treatment would have averted the consequences. The other died, possibly, on account of the deficient stimulation; for he was a man who had lived freely, and took during treatment less than he had been accustomed to have. The main point, however, to which I wish to direct your attention, is that the mortality may be as little as two per cent. I cannot doubt that the mortality was considerably larger when carbuncles were severely cut; for the severe cutting meant often severe bleeding and was attended with all the consequences of large wounds. Thus, though I do not know the exact proportion, I believe that the general reputation of the danger of carbuncle was well founded, and that among the reasons for the diminished mortality of carbuncles may be set down, as chief, the more frequent avoidance of the custom of cutting them.

Speaking of the mortality of carbuncle, however, I must remind you that I am not speaking of a disease which sometimes passes under the name of carbuncle—the carbuncular inflammation of the lip which sometimes occurs in young persons: a disease which you may not have seen, and may pass many years without seeing. It was described by a former house-surgeon of this hospital, Mr. Harvey Ludlow,[1] as malignant pustule of the lip. Dr. Budd, of Bristol, has also so described it. Commencing at one spot, inflammation of the whole lip follows and spreads to the face, and then disease of the lymphatics ensues, with pyæmia as its consequence. It is a disease so unlike carbuncle that it ought not to be known under the same name; but it seems to me not to agree with the accounts given of malignant pustule abroad, and I have seen no other disease like it in England. It attacks especially young persons from fifteen to twenty-one; and of fifteen cases that I have seen, only one recovered. This disease is not ordinary carbuncle, nor is its mortality to be counted in estimating the mortality from carbuncle. Ordinary carbuncle on the lip and face has none of those special characters, and is not more fatal in those situations than in any other.

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[1] *Trans. of Abernethian Society*, and *Med. Times and Gaz.*, Sept. 1852. See also a valuable paper on this subject by Mr. Thomas Smith, *Clin. Soc. Trans.*, vol. iii.

My experience of the treatment of carbuncles in the last ten years, has not led me to deviate from the plan advised in the foregoing lecture. I have seen a much larger proportion of fatal cases; but this is because, since I retired from the hospital, and as I have grown older, I have more rarely been consulted for carbuncles not deemed to be dangerous. And of the eight or ten fatal cases that have occurred, none has been without serious complication, such as advanced diabetes, fatty heart, bronchitis or acute pyæmia. So many deaths may justify a larger estimate of the mortality of carbuncle than the 'fair guess' which I made in the lecture: but they still leave it right to say that the mortality of carbuncle not complicated with serious disease should be less than that of any other disease of the same extent and general severity.

Later experience has made me sure that the disease of the lip, mentioned in the last paragraph of the lecture, is true carbuncle which, because of some peculiarity in the textures[1] of the lip, especially in young persons, is peculiarly apt to infect the blood and generate acute pyæmia. The unlikeness to carbuncle is only in the extremely greater frequency of pyæmia; and this unlikeness did not exist in a lad of eighteen, whom I saw with an ordinary carbuncle in the middle of his back, and in whom acute and rapidly fatal pyæmia ensued with exactly the same phenomena as I have now more than twenty times seen in cases of carbuncle of the lip.

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[1] Note xxi.

SEXUAL HYPOCHONDRIASIS.

THE cases which I advise you to include under this name are those of male patients who regard trivial maladies, or even some of the natural events, in their sexual organs with the unreasonable dread or gloom and watchfulness which are characteristic of hypochondriasis. They are such as are accused or accuse themselves of spermatorrhœa, or of the other maladies of the sexual organs which swindling advertisers profess to cure.

You will find that men with healthy nervous systems, or who are careless, or sensible, or well-informed, will very rarely consult you on any of the so-called functional diseases of their sexual organs; when they have them they endure them without harm or distress. Of those who will consult you, some are merely ignorant of what the natural actions of these organs are or may be; some have brains too emotional, or spinal marrows too irritable, hurrying the secretion of seminal fluids and disordering their emission; but those are most numerous whose minds, in reference to their sexual organs, are unsound. The unsoundness may not be sufficient to be called insanity: let it be called hypochondriasis; and if you will study its general characters with the help of the best essays on the subject, and best of all with the essay on Hypochondriasis by Sir William Gull and Dr. Anstie in Reynolds's *System of Medicine*, I may limit myself to speaking of the conditions of the sexual organs which are associated with disorders of the nervous system.

Of these I will speak rather fully; but first, let me ask you to note the ignorance concerning sexual matters of which I just now spoke: for it is the source of a kind of hypochondriasis in some who, in mere ignorance, imagine miseries for themselves or are made miserable by others' falsehoods.

Ignorance about sexual affairs seems to be a notable characteristic of the more civilised part of the human race. Brutes, even those most changed by our domestication, copulate as naturally as they eat or defæcate. As the instinct for food leads them to eat, and carries with it all the knowledge necessary for the choice and taking of their food, so the sexual instinct has with it the knowledge how to copulate. It is the same, I believe, with the least civilised of our race; but it is not so with the most civilised. It seems as if, in the course of generations, the transmission of intellectual powers gained by education had the effect of subduing or superseding those of instinct. How far up the grades of civilisation this change begins I do not know; but among ourselves it is certain that the method of copulating needs to be taught, and that they to whom it is not taught remain quite ignorant about it; as ignorant as, I suppose, we should be of what to eat and drink if we were not taught. Of course very few, I mean very few of our sex, grow up without being taught, either by the talk of schoolfellows or by books or ther means; but a few grow-up and even marry in omplete ignorance; and this ignorance, which is rare mong men, is very common among well-educated omen.

The fact is of much interest in relation both to the atural history of our race, and to the frequency of xual disorders dependent on the mind or on the nervous stem. For sexual desire arises and grows without the nowledge how to satisfy it; and in the learning how to tisfy it errors and fancies and things half understood et into the mind, and become to some men sources of isery and fright, and to some the subjects of hypochon- riac gloom and watchfulness.

Among the merely ignorant you will find that, if they e otherwise sensible people, they need only to be told e truth concerning the disorders, real or imaginary, for hich they consult you. Knowledge will cure them. ut if they be or have become hypochondriac they will ot receive, or will not retain, knowledge; their er- oneous beliefs will be to their minds stronger than your ruths.

Of these I shall have to speak again in reference to ll the sexual disturbances of which they complain.

Now the complaint of some is that semen passes with heir urine, and that all their 'strength is going from hem'; and of this they give various symptoms, which, f they be at all true, are due to something else. For the eneral notion of semen passing with the urine is erroneous nd is usually derived from dishonest advertisers, who ake it one of the grounds on which they rob their atients.

There is, indeed, a very rare case in which after gonorrhœa or other disease affecting a seminal vesicle, a part of it seems to become sacculated and may be so filled that mucus, and perhaps seminal fluid, may be pressed from it in the last lifting efforts of the muscles for expelling urine. And this out-pressing may be attended with sensations of discomfort, shuddering and tremors; but it is harmless. In the ordinary cases, and those of hypochondriasis, the supposed semen is mucus from the bladder which, when it exists in its natural small quantity in the urine, appears as a pale dim cloud at the bottom of the vessel, sometimes sparkling a little when light passes through it.

As to semen passing with the urine, I am nearly certain that it never does so unless when an emission of semen, in whatever way provoked, has lately taken place or where there has been disease of a seminal vesicle. In the former case some semen, remaining on the walls of the urethra or possibly having passed into the bladder, is washed-out with the next stream of urine, and may be found in it with the microscope. I once examined, for many days in succession, the urine of a patient who was persuaded that he passed semen with it; and semen could always be found when he had had a nocturnal emission but never on any other occasion. A former colleague of mine assured me that he had frequently observed the same thing after copulation. And this, I believe, is the whole truth concerning semen passing with urine; whatever may chance to be left in the urethra after an emission is washed out. But that which frightens the ignorant and the hypochondriacal is not even this; it is mucus of the urinary passages, either quite healthy or in some trivial manner changed. This form of what is called spermatorrhœa, therefore, should be treated by instruction, which the merely ignorant will receive and the hypochondriacal, very probably, will not.

Not much unlike this misunderstanding about vesical mucus is another in which some people, chiefly middle-aged and elderly with diminishing sexual powers, make themselves miserable. They find in their urine little flakes or threads of floating mucus which, they say, are always washed out of the urethra at the beginning of the urine-stream, especially in the morning. They watch these with the greatest anxiety; and send them to you on bits of paper or of glass, begging you to examine them very carefully. I believe that they are bits of prostatic mucus, secreted in the night and washed-out with the morning-urine. But, whatever they may be, they are not of the least importance. You may find them passed by men who neither know nor care anything about them, and whom they never harm; and even hypochondriacs go on, month after month, passing them and yet suffering nothing but their mental misery.

There is really nothing more serious in these flakes of mucus, than there is in the mucus for which some men, or even these same men, blow their noses oftener than others; or in the secretion which makes some people's eyelids stick together in the morning. It seems strange that mucus from one place should make people so much unhappier than mucus from another. But this is the usual character of hypochondriasis; it is as if a morbid element of the mind could localise itself, as a morbid element of the blood may, in some 'place of election.'[1]

Again, some or the same persons are unhappy because, as they say, they pass semen during defæcation. But these, again, do nothing more than healthy men often do. When the rectum is emptied with much muscular force, and especially when large solid fæces are being passed, the contents of the vesiculæ seminales and of the prostatic ducts and, I dare say, of Cowper's and other mucous glands besides, are apt to be pressed-out; and hence it is not rare for healthy men to find mucus, or some fluid like it, escaping from the urethra during defæcation attended with straining. And when the vesiculæ seminales are filled with semen, as they may be when it is long since an emission took place or when, in an emission, they are not emptied, their fluid together with semen may be pressed from the urethra with something even of the sensation of emission. All these things happen to healthy people without harm: they are not unnatural; certainly they are not effects or signs of disease: and when anyone comes to you complaining of them, it is his mind, not his sexual organs, that requires treatment.

Another subject of gloom and alarm to some is that during sexual excitement and, as they suppose, worse still, when they wake in the morning, they find a clear colourless fluid flowing from the urethra or easily pressed from it. Here, again, the complaint is of that which is natural, and it would be quite as just if directed against tears during grief. The urethra naturally secretes mucus during sexual excitement; it secretes more or less in different persons, but some, I believe, in all; and as for the morning secretion, it is due either to some sexual excitement during sleep, forgotten before waking, or to the general condition of turgescence or erection of the sexual organs which, in most healthy persons, exists during sleep or some part of it. In no case is this clear urethral mucus a sign or consequence of disease, unless indeed when an excess of it is a residue of gonorrhœa. It is, I think, most abundant and most quickly formed in those whose sexual organs are more irritable than potent; but this is the worst that can be said of it; and even in these it is not the sexual organs, but some part of the nervous system, the brain or the spinal marrow, that is in the wrong. In no case does the secretion deserve to be called or treated as a disease.

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[1] Prostatorrhœa, prostatic gleet, or whatever else the disease may be called, which is attended with constant excessive secretion from the prostate or vesiculæ, or both, is not here referred to. This is a real disease and very troublesome, whether associated or not with spinal irritation or with hypochondriasis.

Again, there are some to whom, whether through ignorance, or misguidance, or hypochondriasis, a varicocele is a source of misery and dismay. They look on it as a forerunner of impotence, and of wasting testicles, and I know not what besides. All such fears are groundless. Varicocele is troublesome because of the sense of weight and aching which sometimes, though far from always, attends it, and which is sometimes much increased by long standing or walking. In some cases, too, the dilated veins, like varicose veins in the leg, are apt to become inflamed or very sensitive. But this, I believe, is the widest limit of the harm that varicocele ever does. I do not believe that it ever produced wasting of a testicle, or impotence, or any such thing. It is common enough to find varicocele in quite healthy men who, being sufficiently careless or sensible to make light of it, suffer no harm either mental or bodily. Some who have it while they are single and chaste are cured by marriage; and in some it ceases to cause even its slight occasional aching when they begin to grow old. In short, the cases in which varicocele is more than a trivial affair are very few; and in these few its mischiefs are not such as the sexual hypochondriacs imagine. They are, indeed, altogether distinct from the functions of the sexual organs; being such achings and wearing pains as may be felt in varicose veins in the legs. These may be sufficient to disqualify a man for military service; but they are not sexually important; and, in those who believe they are, it is a mental error, not a bodily one, that needs cure.

I can very positively give you the same assurance about those who will consult you on several other things such as the scrotum being too pendulous, or the penis being cold or shrivelled, or the testicles too small when in fact they are of ordinary size.

But now I must speak of something which may, in its greater degrees, have the character of real if not serious disease; I mean the nocturnal and other involuntary emissions of semen. I say, in its greater degrees; for, in the lesser, the emissions are natural, and it is a sign of ignorance or hypochondriasis if the mind dwells sadly on them. And I may add, that of all the cases of such emissions on which you will be consulted, not more than one in fifty will deserve serious consideration unless for the state of the patient's mind and nervous system.

To those who lead chaste lives, and to some of those who do not, nocturnal emissions of semen are natural ccurrences. I never met with a chaste healthy man, of whom I had occasion to ask about them, who did not ay that he had them sometimes. Their frequency is n different men very various: varying according to many things, such as climate, diet, social habits, and, above all, I think, according to the degree in which the minds of those who do not have sexual intercourse are directed to sexual matters. Thus nocturnal emissions may vary from once or twice in a week to once in two r three months, or, at times of unusual exhaustion or xcitement, they may exceed those rates or may fall short f them: but in both sets of cases and in all the inter-ediate frequencies they are consistent with good health. Men who are careless, or sufficiently well-informed, say othing about them and suffer no harm. When, there-re, any person with a sound nervous system, and having octurnal emissions within such limits as I have men-oned, consults you about them, it is best to tell him hat they are natural occurrences which may be left to heir own course, and you may add that they cannot be ut an end to and ought not to be if they could.

But the case is different in men with over-sensitive ervous systems, or in whom one may believe that at east that part of the spinal marrow which is in nearest elation with the sexual organs is over-irritable. In this ondition the emission of semen is apt to take place with much less than the normal amount of excitement. Hence it may take place too quickly during or even before sexual intercourse; sometimes without erection and almost without sensation; sometimes from the mere friction of the dress in riding or walking, or during sensual thoughts; and frequently at night with or without sensual dreams. This, if anything, might be called spermatorrhœa; but even this is not properly a disease of the sexual organs: it is a disease or a disorder of the nervous system, and may most probably be referred, as I have said, to a too irritable condition of the spinal marrow or of some portion of it. For, with the too frequent and too quick emissions there are always other signs of nervous disorder which, though commonly regarded as due to the emissions, are really not so.

The chief of these signs are aching of the back and lower limbs, especially after emissions; readiness to be fatigued, and in all fatigue pain; weary limbs and spines; indisposition or seeming incapacity for mental exercise; defect of will and of power of attention; often restlessness at night and unrefreshing sleep; hysteric fits or feelings. Many patients, too, are troubled with palpitation; many with constipation; some with excess of lithates; some with oxalates in their urine; not a few with irritable bladder; some with various nervous indigestions; some with coldness of feet and hands.

Now, neither these nor any other of the signs commonly enumerated with them are characteristic of disease of sexual organs: they are signs of a central nervous disorder; they are the very same as are found in many cases of 'spinal irritation' and of so-called hysteria in which there is no indication of any sexual disturbance, but, if anything, some disturbance at the heart, or the bladder, or a joint or some other part. Moreover, these

ous signs bear no proportion to the emissions, and,
gh commonly aggravated by them, are only so aggra-
d as the same symptoms are in nervous women at the
strual period, or by any other sudden or consider-
expenditure of nervous power.[1]

The utter prostration which women, and some men
with spinal irritation complain of after walking is
counterpart of that which is complained of by these
ous patients after their emissions; and I have heard
ents complain of it even during digestion, or after
r daily defæcations, though these were with neither
nor straining. It is true that there are few if any of
e cases worse than those in which the nervous dis-
r, which I hold to be the primary affection, is directed
the sexual organs, or has been wilfully directed
them by frequent masturbation or irregular sexual
tices; but, in not a few of those who lay the fault of
r nervous troubles on their seminal emissions, the
al organs act healthily. One of the worst cases that
ve ever seen was in a married man who, because of
k-ache and many more of the sensations I have enume-
d, lay, like many hysterical women, constantly on his
k, travelled on his couch, or at most moved slowly
crutches. He had occasional sexual intercourse; and
back was always more painful after it, and he felt
erable and exhausted and prostrate; but so he did

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[1] This lecture was given before those on Nervous Mimicry; but the
ts of likeness between the subjects of sexual hypochondriasis and those
h disorderly nervous systems to whom those lectures relate are very
erous and clear. Especially, there is likeness between the men with
disease and the women who have uterine disturbance: and the dif-
nce in their mental states agrees with the general fact that hypochon-
sis is much commoner in men than in women.

after a walk or any other unusual expenditure of nerve-force. In another, a man of 30, who lay helpless and will-less, weak-eyed and utterly enfeebled, a very type of the supposed victims of spermatorrhœa, nocturnal emissions occurred very rarely. They were followed by increase of back-ache and other miseries, but in no greater degree than was every unusual mental or bodily effort: and this patient had never had sexual intercourse, had masturbated only twice or three times in his life, and had had very few nocturnal emissions.

Now, in some of these cases of rapid and frequent emissions, the consequence, as I want you to believe, and not the cause, of nervous disorder, there is no mental error: the patients are not more than reasonably distressed by the inconvenience they suffer. But in many cases hypochondriasis is associated with the rest of the disorder, and increases immeasurably both the misery and the difficulty of cure. The patients are full of apprehensions, unable to divert their minds from their sexual functions, constantly watchful of their sensations and making them constantly more intense. And further mischief follows all this: for the direction of the mind to the sexual organs makes both them and the parts of the nervous system associated with them more and more irritable; it increases the secretion of seminal fluid, and hurries its discharge. The mind thus continually multiplies the sources of its own misery.

Few conditions are more pitiable than those of hypochondriacs who thus suffer, and few more difficult to cure. Your chance of doing good will depend mainly on the skill with which you can influence the patient's nd: for of the components of his case the mental ndition is the worst, the irritable spinal marrow the xt, the state of the sexual organs the last, in order of avity. Not that local treatment is to be neglected, for the unnatural sensibility of the sexual organs can be ninished the mind may be less often distressed by issions.

To this end, cold enemata are sometimes useful, and netimes galvanism; and in some cases the passing of ugies or catheters, with or without caustic for the ostatic part of the urethra. But all these things often l; and, as for the last, I have seen so many cases in ich it has been mischievous that I am sure it should used seldom, and never without more than ordinary ill. But of its being sometimes useful under these nditions I cannot doubt.

For the nervous state you must use, as for any other ses of 'spinal irritation,' iron, good food, and good air, d the correctives of any coincident disorder of the gestive or other organs; and you must persuade to a bust, sensible and fully occupied habit of life, with uch sleep and the best self-control that can be obtained.

But do what you may the hypochondriasis will, in the orst cases, remain; and if, even, the sexual trouble ould cease, the mental wrong will continue, only anging its subject, or dwelling on the past as gloomily it used to dwell on what was present. And in some e hypochondriasis will gradually drift into a more ident insanity.

Now, when one of these patients becomes insane the ame is commonly laid on his sexual organs, or on his having practised masturbation. Before I end, I will tell you the wrong of this; but I must first speak of another of the conditions on which hypochondriacs think erroneously: namely, impotence. This impotence, or even greatly reduced sexual power, is so distressing even to those who may be called reasonable men, that you may sometimes be ready to ascribe to mental disorder what is a material disease or defect. Your study, therefore, in each case, must be to ascertain whether the impotence complete or incomplete be real, or due to ignorance or some nervous disorder; or whether there be no impotence at all but only a hypochondriacal fear or false persuasion of it. Now of the real cases of impotence I can only enumerate the chief forms. It may be due to disease or wasting of the testicles, but this, unless the disease or wasting be extreme, is very rare. (Observe, I do not speak of sterility which means only inability to beget children, but of impotence which means inability to copulate.) It may follow abscess or other acute disease of the prostate. Very rarely and inexplicably, it is sometimes a sequence of fever; sometimes of injuries of the brain or spinal cord. It is found during exhaustion from excessive and anxious mental work, with 'jaded brains'; and during some forms of dyspepsia, with oxaluria: but in these cases it is only temporary. It is not rare with advanced diabetes; and is common with several forms of degeneracy of the spinal cord. In old age it is happily not rare. At any age it may begin and continue very long in those who have been excessive in either sexual intercourse or masturbation. Nay, all sexual power and desire may cease in apparently healthy men, and without apparent cause, at unusually early ages: in cases that I have known, as early as thirty-five or forty, even in those who never masturbated and very rarely had sexual intercourse.

But although the physical causes of impotence and great decrease of sexual power may be thus numerous, yet from all these causes together the cases are less frequent than those due to nervous disorder or to mental defects; and the impotence which is complained of or dreaded without any real reason is more common still. The mental and nervous defects which may make a man impotent are various in different persons; some hindering or interrupting erection; some preventing emission; and they are as various in degree; some are only occasional, a few are habitual or scarcely constant. They may be cured, if at all, by means addressed to the mind or to the nervous system; but they are all hard to cure; as hard as it is to cure stammering, whether in speech or any other function, or to cure any of the disorders of those functions for the perfection of which the will must act in exact harmony with parts not under its direct control.

I have enumerated all these causes of impotence to help you to guard against the risk of treating as a mere hypochondriac anyone who really has this malady from either mental or physical causes. As a rule the distinction is not difficult. They who complain of impotence alone are distressed about it, and very anxious for its cure; more so than to the cool judgment of anybody else may seem reasonable; but here is the boundary of their unhappiness; they do not tell or prophesy other miseries, and do not give up their minds to their diseases. Moreover, they who are impotent, or nearly so, from other than mental or nervous states have a loss of sexual desire as well as of power.

The sexual hypochondriac may or may not be mentally impotent; but in the great majority of cases is not. Most of those who consult you will tell you that though they have sexual desire yet they are impotent, or are afraid they are, and are therefore afraid to marry, because they have some of the trivial things I have been speaking of; occasional nocturnal emissions, or urethral mucus or varicocele or something not more important. Now if a man has sexual organs, including the prostate, not manifestly diseased or wasted, and has erections and occasional nocturnal emissions, and any sexual desire, you may be sure that he is not impotent, unless he has very clear facts to prove that he is. The statements that hypochondriacs make to show that they are, or are becoming, impotent are usually evidences that they are not. And what is true of hypochondriacs is equally true of those who are frightened by mere ignorance of sexual matters or who have been fraudulently misinformed.

You may observe that, in speaking of sexual hypochondriasis, I have spoken of three different classes of men or boys in whom functional disorders of the sexual organs may need to be treated. There are, first, the merely ignorant or misinformed; next, those with over-sensitive or too irritable nervous systems; and lastly, the hypochondriacs. The conditions respectively characteristic of each may be mingled in various degrees, but they are worth keeping in mind as guides to treatment.

The patients of the second class alone need medicinal help, and what this may be I said just now: the others must be mentally helped.

With careful and very positive teaching you will cure the ignorant, and do good to all but those whose hypochondriasis is near to complete insanity. But on some subjects of your teaching you will have to be very clear as to matters of fact; especially, for instance, as to the practice of masturbation, to which many of your patients will ascribe their chief distresses.

Now, I believe you may teach positively that masturbation does neither more nor less harm than sexual intercourse practised with the same frequency in the same conditions of general health and age and circumstance. Practised frequently by the very young, that is, at any time before or at the beginning of puberty, masturbation is very likely to produce exhaustion, effeminacy, over-sensitiveness and nervousness; just as equally frequent copulation at the same age would probably produce them. Or, practised every day, or many times a day, at any age, either masturbation or copulation is likely to produce similar mischiefs or greater. And the mischiefs are especially likely or nearly sure to happen, and to be greatest, if the excesses are practised by those who, by inheritance or circumstances, are liable to any nervous disease,—to 'spinal irritation,' epilepsy, insanity, or any other. But the mischiefs are due to the quantity, not to the method, of the excesses; and the quantity is to be estimated in relation to age and the power of the nervous system. I have seen as numerous and as great evils consequent on excessive sexual intercourse as on excessive masturbation: but I have not seen or heard anything to make me believe that occasional masturbation has any other effects on one who practises it than has occasional sexual intercourse, nor anything justifying the dread with which sexual hypochondriacs regard the having occasionally practised it. I wish that I could say something worse of so nasty a practice; an uncleanliness, a filthiness forbidden by GOD, an unmanliness despised by men.

Another point on which you may have to teach is that of dreams associated with nocturnal seminal emissions. Men of scrupulous conscience are deeply distressed with the thought that these emissions are due to sexual feelings which they ought to be able to suppress even in their dreams; they look on them as tokens of a prevalent impurity of mind which they must cure. Well, you may tell them that, according to all we know of dreams, it is not the dream that excites the emission, but the natural and involuntary erection and emission that determine the dream, and that over the erection and emission that may occur in sleep or on just waking it is impossible that any man should exercise direct control; he might as well try to control while asleep the tone of his snoring or the posture of his limbs. Some indirect control a man may have on all these things, and on the sexual part of them it may be held that the more the mind while awake is occupied in other than sexual matters, and so occupied that it is not even necessary to use any effort for the suppression or exclusion of sexual thoughts, the less will be the secretion of semen and the sensibility of the sexual organs, and therefore the less

quent the excitements and emissions during sleep.
it, in some persons and, as I believe, in the great
ajority of those who are chaste, nocturnal emissions and
e associated unclean dreams are simply irrepressible:
ey are due to a natural secretion of semen which we
ve no means of suppressing and no right to suppress.
erefore, to men with healthy nervous systems you
ust tell that their nocturnal emissions are evidences of
alth rather than of disease. And to those in whom too
quent emissions are connected with a too irritable state
the spinal marrow, you may tell that they cannot and
ght not to be wholly suppressed; but that they may
remedied by marriage and may, very probably, be
minished by means that will improve the condition of
e spinal marrow.

To all alike you may try to teach a virtuous and
dicious carelessness about these things: a state of mind
ich would be an inestimable blessing to many besides
ese sexual hypochondriacs.

Many of your patients will ask you about sexual in-
rcourse and some will expect you to prescribe fornica-
on. I would just as soon prescribe theft or lying or
ything else that GOD has forbidden. If men will practise
rnication or uncleanness it must be of their own choice
d on their sole responsibility. We are not to advise
at which is morally wrong, even if we have some
ason to think that a patient's health would be better for
e wrong-doing. But in the cases before us, and I can
agine none in which I should think differently, there is
t ground enough for so much as raising a question
out wrong-doing. Chastity does no harm to mind or

body; its discipline is excellent: marriage can be safely waited for; and among the many nervous and hypochondriacal patients who have talked to me about fornication, I have never heard one say that he was better or happier after it; several have said that they were worse: and many, having failed, have been made much worse.[1]

The mental treatment which I have thus suggested will be in many cases sufficient. It will be more or less useful according to the degree of good sense possessed by the patient. A sensible man, who has been only ignorant on sexual subjects, who can understand evidence and is ready to believe those who are most likely to tell him what is true, will be cured when the truth is told. At the opposite extreme, the worst of the hypochondriacs will be almost incapable of cure: they will believe nothing hopeful; they will be dull to all common-sense statements; many of them will prefer to be guided by rogues rather than by honest men.

Between these extremes you will have various degrees of success; and in the vast majority of cases time does good. Some few patients, whose hypochondriasis is a form of inherited insanity, become plainly insane; some, though they marry and have duly regulated sexual intercourse, and may cease to have involuntary emissions, yet retain their other nervous symptoms, and continue hypochondriacal; but the vast majority get well. Some fall in love, marry, and are cured; some getting into the weighty responsibilities of life, have things to think about more important than their sexual organs, and in all, as they grow older, the spinal marrow becomes less irritable, so that the emissions, if they have been annoyed with them, become less frequent and are attended with less feeling of exhaustion.

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[1] Professor Humphry very justly points out that the functions of the sexual organs, and we may include with them the related parts of the nervous system, 'may be suspended for a long period, possibly for life; and yet they may be sound and capable of being roused into activity.' The same can scarcely be said of any other parts. Holmes's *System of Surgery*, vol. v. p. 151.

Now, let me end by speaking, as I said I would, about he statements that miseries beyond any that I have told f are frequent consequences of the so-called functional exual diseases. Epilepsy, all forms of paralysis, wasting alsies, amaurosis, impotence, insanity, idiotcy, emaciaon, disease of the heart, phthisis, and whatever else may ighten the timid, or attract the morbid fear of the ypochondriac, are advertised by swindlers as the sure onsequences of sexual disorders, unless they be averted y some secret treatment. And these men live on the nsane and the foolish whom they can attract. They would do less harm, and be less encouraged in their frauds, if they could not refer to the works of some members of our own profession for opinions justifying what they pretend to be their own.

First among these false teachers is Lallemand. His picture of Spermatorrhœa, in its complete form, is a description of something which I believe to be unknown among Englishmen. It may be that there is no such disease in France: a wild imagination may have suggested it: but whether it can be found in France or not, I believe you will never see it here. I have not yet seen such a case as any of the worst cases which Lallemand describes, nor any which would justify the general tone of his descriptions. To many others with as good opportunities as myself for seeing rare and severe cases they are as completely unknown: and I observe that English writers on the subject, when they wish to tell the worst things to which spermatorrhœa can be said to lead, speak, not from their own observations, but from what they believe to have been Lallemand's.

But setting aside his account, you will find, even among honest English writers, more serious troubles assigned to sexual disorders than I think they can justly be charged with.

In speaking of the symptoms of irritable spinal marrow associated with frequent seminal emissions, I indicated the fallacy of the argument on which it is held that these symptoms are the consequences of the emissions. The emissions, I said and (I hope) showed, are the consequences not the cause of the disorders of the nervous system; they may aggravate the condition from which themselves arise, but it is only in this sense that any measure of the disease can be ascribed to them.

Nearly the same may be said concerning the other supposed consequences of sexual disorder and sexual excess of whatever kind. Let us take, for instance, insanity; and what is said of it might be said of epilepsy and the other horrors assigned as consequences of spermatorrhœa and masturbation.

Masturbation and sexual excesses are commonly assigned as the cause of insanity in a considerable proportion of the insane inmates of asylums. But, I think you will find that no estimate is attempted of the probability that they who are said to have been thus made insane would have become insane without this or any other excess. No doubt, in any man who inherits a disposition to insanity, excess of any kind, whether in sexual things, or in drinking, gambling, or any other, will hasten or determine the advent of insanity: but excesses do not make men insane who have naturally healthy brains. Think of the number of habitual drunkards whom we see dying here: the poor wretches are not mad, unless their drunkenness be a sign of it, an effect not a cause of insanity. Or, think of the number of sensualists in all classes of society, who, to the last degree and their latest life, stimulate and indulge their sexual desires in any way they can. These do not become insane in any larger proportion than do gamblers, or over-active politicians, or even the vehement students of science. To determine the influence of excesses in producing insanity you must count, not only the insane, but the sane who have committed excesses and retained their mental power.

And, even among the insane there are many of whom it would be truer to say that they masturbated because they were insane, than that they became insane because they masturbated. It is the same as with drunkenness. Habitual and paroxysmal drunkenness seem to me more frequently the consequence of insanity than insanity is of them. Certainly, the most marked cases are in those who are members of families in which insanity and other maladies of nervous centres are prevalent, and in those who are on other and previous grounds known to be not wholly sane or of average mind. Given a predisposition to insanity and, no doubt, any of these exciting or, as they may better be called, exhausting causes may induce it; may hasten it or determine its occurrence.

And the greater the disposition, the less need be the exhaustion that will suffice: while in those in whom there is only the least, if any, disposition to insanity, nothing less than the utterest exhaustion from excess may suffice to produce it, if even this may. The drunkards and sensualists who live and die sane are too many to let us speak of hard drink, or masturbation, or sexual excesses as causes of insanity, unless under many reserves and conditions.

And what is true in respect of insanity is true in respect of other assigned consequences of sexual disorders. These disorders are effectual exciting causes of only such diseases as the patients are prone to; and the proneness or predisposition is much nearer to the essence of the disease than is the exciting cause.

GOUTY PHLEBITIS.

HAVE met with certain cases of phlebitis, the like of hich I cannot find on record. I propose, therefore, to ive some account of them. They are all examples of he so-called adhesive phlebitis; the disease in which nflammation of the coats of a vein is associated with lotting of blood in its canal, but not with suppuration or yæmia. Of many of them, indeed, I cannot tell, any ore than of certain other forms of phlebitis, whether he inflammation or the clotting were the first event, nor, erefore, whether they are to be referred more properly phlebitis or to thrombosis. But I give the former ame to them all because it is in most common use mongst us and is probably correct for at least one part r stage of every case.

Many of the varieties of adhesive phlebitis have been well described, that I need only refer to them for the ake of comparison.[1] Such are—

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[1] Such descriptions may be found in, or by means of, Callender, Art. Pyæmia;' Holmes's *Syst. of Surgery*, vol. i., and 'Diseases of Veins,' in he same, vol. iii.; S. Weber, *Handbuch der Chirurgie*, von v. Pitha u. Billroth, B. ii. Abth. ii.; Humphry, *On the Coagulation of the Blood in the Venous System during Life*, 1859; Mackenzie, *Pathol. and Treatment of Phlegmasia Dolens*, 1862; Henry Lee, *Diseases of the Veins*, 1866; Virchow, *Cellular Pathology*; by Chance, lect. x. 1860; Rokitansky, *Pathologische Anatomie*, B. iii.

1. The traumatic; including those due to distension, or to subcutaneous rupture, such as I have known happen in a varicose saphena during violent coughing.
2. Those occurring in exhaustion during, or after, either acute or chronic disease.
3. Those due to extension of inflammation or of blood-clotting from ulcers, morbid growths, or gangrenous or acutely inflamed parts.
4. Those of the so-called idiopathic, or rheumatic form which Dr. Mackenzie very fully described; but among which I am convinced that a closer study would lead to the distinction of different forms associated with as many differences of constitutional affections.
5. The pyæmial.
6. The puerperal; among which it is probable that examples of all kinds, especially the gouty and the pyæmial, only modified by the puerperal state, are grouped.
7. The typhoid; occurring in the convalescence of typhoid fever [see p. 396].

Any of these forms of phlebitis may be modified by occurring in veins already varicose; but, passing by these, I proceed to the more proper subject of the paper.

Gouty Phlebitis.—The use of this name is, I believe, justified by the frequent occurrence of cases in which phlebitis either is associated with ordinary gouty inflammation in the foot or joints, or occurs, with little or no evident provocation, in persons of marked gouty constitution or

th gouty inheritance. In such cases the phlebitis may
ve no intrinsic characters by which to distinguish it;
t, not rarely, it has peculiar marks, especially in its
nmetry, apparent metastases, and frequent recurrences.

Gouty phlebitis is far more frequent in the lower limbs
an in any other part; but it may be seen in the arms,
d it is not limited to limbs that are, or have been, the
ats of ordinary gout. It affects the superficial rather
an the deep veins, and often occurs in patches, affecting
r example) on one day a short piece of a saphenous
in, and on the next day, or many days later, another
parate piece of the same, or a corresponding piece of
e opposite vein, or of a femoral vein. It shows herein
evident disposition towards being metastatic and sym-
etrical; characters which, I may remark, by the way,
e strongly in favour of the belief that the essential and
imary disease is not a coagulation of blood, but an in-
mmation of portions of the venous walls. The inflamed
rtions of vein usually feel hard or very firm; they are
inful, aching, and very tender to the touch; such pain,
deed, often precedes the clearer signs of the phlebitis,
d not rarely begins suddenly. I have known it begin
a man walking nearly as suddenly as the pain of
pturing a muscle. The integuments over the affected
ins (where they are superficial) are slightly thickened,
d often marked with a dusky reddish flush. When
perficial veins alone are affected there may be little
dema; but when venous trunks, as the femoral, the
hole limb assumes the characteristics of complete venous
struction. It becomes big, clumsy, featureless, heavy,
d stiff; its skin is cool and may be pale, but more often

it has a partial slightly livid tint, which may always be discerned by comparison with the other limb, and has mottlings from small cutaneous veins visibly distended. The limb thus enlarged feels œdematous all through; but firm and tight-skinned, not yielding easily to pressure, and not pitting very deeply. By this state almost alone the disease must sometimes be recognised, for the swelling may be very marked when only a small portion of vein is affected, and that (as the lower part of the popliteal) so deeply seated as to be scarcely felt.

The constitutional disturbance associated with this condition is at most that of slight feverishness, or of an ordinary gouty attack, more or less acute in different cases. The effects of the disease I have never had an opportunity of examining by dissection;[1] for in the only fatal cases that I have seen, no autopsy was allowed. So far as one may judge of them, by after-events during life, the veins which may have been obstructed become, in some cases, pervious again; for in some instances the clearing-up of the œdema, and the restoration of the healthy condition of the limb, become, though it may not be for many months, at last complete. Yet the veins may remain apparently very susceptible:—they may ache exceedingly during fatigue or trivial illness or in changing weather; and I have known phlebitis excited by trivial causes in the same veins three or four times during what might be regarded as convalescence. In other instances however (but I think they are rarer than in other forms of phlebitis), the obstruction of the veins appears complete and permanent; and then, if they be trunk-veins, the limb remains permanently enlarged, cumbrous and heavy. Its superficial veins may, after some time, become varicose; and others may enlarge for collateral blood-streams; and I believe that an increased growth may take place in some of the tissues, especially the muscles, of the limb.

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[1] Unless in the Pathological Museum of the College of Surgeons, in which Nos. 1732-3 are, I am nearly sure, examples of veins affected with gouty phlebitis many years before death.

Equally with the other forms of phlebitis, but as rarely as in any, that which occurs in gout may be fatal or very dangerous by embolism. Incomplete pulmonary embolism probably occurs in the cases in which, during gouty phlebitis, embarrassed breathing and tremulous action of the heart almost suddenly ensue, and then slowly but completely subside. In other cases such embolism is fatal. A well-marked instance occurred in a member of our profession, whom I saw with Dr. Ferguson and Mr. Morgan. He was suffering with a severe and protracted attack of gout, such as he had had more than once before. During its course he had signs of phlebitis in scattered portions of the veins of the right thigh and leg (having previously had phlebitis three times from accidental causes). He was sufficiently recovered to be down-stairs, and engaged in writing, and thought himself convalescent; but having walked up-stairs to his bedroom, he fell down as if in a deep syncope, and remained nearly an hour, breathing very faintly, scarcely conscious, and with a feeble fluttering pulse. In a few hours he seemed quite recovered, and next day, and two days later, we could find nothing additionally wrong about him, except a fresh attack of similar phlebitis in the opposite thigh. We examined his chest, and detected only some slight crepitus and faint breathing about the root of one lung. All appeared going on well for three days, and he had no sign or warning of severe illness; but five or six days after the previous 'fit,' as he was sitting on the night-stool, he fell forward and rapidly died with a renewal of the signs of syncope and feeble breathing. No examination after death was made, but from the likeness of the manner of death to that which I have seen, in cases of ascertained embolism from systemic veins into the pulmonary artery, I cannot doubt what happened here. It is probable that in the first fit, the obstruction of the pulmonary artery was partial; or that the clot was broken up, and its fragments dispersed; and that in the second, another clot remained blocked in the main artery, or was heaped on the adherent fragments of the previous clot.[1]

Gouty phlebitis is often hereditary. A patient, who had phlebitis in successive patches of both saphenous veins during an attack of acute gout, told me that his father and his paternal grandmother were gouty; and that, among his relatives on the maternal side, his mother, two uncles, grandmother, and two cousins, had inflammation of veins. And I can scarcely doubt that among the cases of phlebitis which are called 'common,' and are supposed to be referable to cold, or some wholly external cause, many might be traced to the gouty diathesis, however diluted and modified in its hereditary transmission.

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[1] Mr. Prescott Hewett, in *Clin. Soc. Trans.* vol. vi. 1873, p. xxxvii., has given a lucid account of cases of gouty phlebitis, confirming and extending this description of it.

In the management of cases of gouty phlebitis, the me general rules must be observed as in gout of equal verity affecting any other external part. I have never en or heard of good derived from active treatment. eeches do no good; mercury (I think) would do harm f given in more than an occasional dose; purgatives eem unnecessary; colchicum has the same limited value s in other forms of gout, and appears useful in direct roportion to the severity of the symptoms. Alkaline rinks are certainly comfortable, and very probably use-ul; and certainly useful are diminution of food and of imulants, and an increase of water-drinking. But more portant than all these is rest, with the trunk and limbs vel; or with the affected limb slightly raised. In this ndition there are the best opportunities for the adhesion the clot and its union with the walls of the vein, and e least risk of its detachment. Among local applica-ons none seem more useful than frequent fomentation nd wrappings of the limbs with hot wet flannels, or ently applied flannel bandages.

The question generally arises, how long must this est continue? It is hard to answer; for, I believe, we ave no knowledge of the time required for the organisa-ion and adhesion of a clot with firmness sufficient to revent the risk of embolism. I think that three or four eeks may suffice in a generally healthy person. I have, ndeed, known fatal embolism in one who had had gouty hlebitis for seven weeks, but he was an unsound person with enlarged spleen and probably unhealthy blood. A month should be insisted on for a vein as large as the emoral; that is, a month from the beginning of the last marked attack of pain. I say the last, for in this, as in all other forms of gout, one of the greatest troubles is in the tendency to relapses.

When all severity of symptoms has passed-by, the swelling and clumsiness of the affected limbs are generally very troublesome and tedious. The best remedies are in hot spongings, gentle shampooings, gentle exercises and bandages. Long standing must be avoided, and all postures in which the joints are at acute angles; the advice to have the lower limbs raised is useless unless the trunk is reclining. Elastic stockings are useful if there be varicose veins; in other cases they may be tried, but are often useless.

Not rarely, after phlebitis of whatever kind, the muscles of the affected limb become large and strong. I referred to this in a paper published in the *Medical Times and Gazette* of March 1858, and soon afterwards received a letter from the late Professor Laurie, of Glasgow, from which the following is an extract:—

'I am the subject of one form of that peculiarity which I suspect is not very common, and which depends, as you hint, on diseased or varicose veins.

'In the year 1831, I had an almost fatal attack of Typhus [? typhoid]. During convalescence, I was seized with phlegmasia dolens of my left lower limb, attended with exquisite pain in the ham and calf. When the pain subsided, and I commenced to leave my bed and dress, I was astonished to find that while my right thigh and leg were emaciated, as they usually are after such an illness my left was nearly, if not actually, as large as when took to bed. It was not in any way misshapen, œdematous—simply plump, and full-sized. When recovered so far as to be able to walk, I found the veins enlarged, and, by night, the whole limb œdematous, but in the morning the soft swelling had disappeared, and the muscular enlargement round the calf remained. The xcess was at least an inch. For many months I was nfit for much walking; indeed, but for a large laced ocking, I should have been compelled to relinquish my rofession. I wore one for two or three years, and then as able to lay it aside, but as I got older, I was obliged return to its use, and for years back I have worn an lastic stocking. The veins are now decidedly variose, and the limb becomes œdematous after unusual atigue. The soft swelling readily disappears under rest, nd, as formerly, the muscular enlargement remains. It is, however, now less obvious than formerly, as I am unhappily much less muscular than I was ten years ago.'

The overgrowth of parts whose veins are obstructed is very notable in the rare instances of phlebitis in young children. I have lately seen a child five years old, whose right lower limb has for three years been growing larger than the left. In the day, and when long dependent, it becomes œdematous; but during the night the œdema disappears, and the limb only looks much too large. Many parts of the thigh are mottled, dusky, and pink, and part of the skin at the knee is coarse-textured and warty. The whole aspect of the limb is like that of the limbs of adults in which, as in Professor Laurie's, the femoral or common iliac vein has been long obstructed. One might suppose it a case of simple hypertrophy, but that the limb is cold, not over-warm; or one of obstructed lymphatics, with growth from retained lymph, but that the blotches on the skin are characteristic of obstructed veins.[1]

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[1] In the last edition I added some remarkable cases of phlebitis which appeared consequent on poisoning by air of foul drains. They are omitted as having no clear relation to the proper subject of the essay. For further illustrations of gouty phlebitis I may refer to papers by Mr. Prescott Hewett in *Trans. Clin. Soc.*, vol. vi. 1873, p. xxxvii., and by Dr. Tuckwell in *St. Barth. Hosp. Rep.*, vol. x.

RESIDUAL ABSCESSES.

NDER the name 'residual abscesses' I would include all scesses formed in or about the residues of former in- mmations. Most of them are formed where pus, pro- ced long previously, has been wholly or in part retained d become dry, or in some form 'obsolete.' But some them, it is probable, are formed in the thickenings, hesions, or other lowly organised products of inflamma- n long past.

Abscesses thus formed are probably well known to ny, but, to give them a name and separate illustrations y help to show that they are of more frequent occur- nce than is commonly supposed, and are often important diagnosis.

Suppuration among the products of a former inflam- ation is probably an illustration of what may be held as nerally true concerning many relapsing inflammations, mely, that they are due to the disturbed or interrupted utrition, not only of the tissues deteriorated in previous flammations, but of the new materials that were formed mong them. Thus, in the frequently relapsing inflam- nations of testicles, and joints, and other parts that one ees in a constantly 'fretful' state, the 'weakness,' 'low vitality,' or 'want of tenacity of composition,' which are indicated by inflammation under every slight provocation, are to be ascribed rather to the remaining products of former inflammations than to the original textures of the parts. Thus adhesions become inflamed, and, by softening, may permit joints to be distorted whose shape had been deemed secure in a tough anchylosis; and residues of pus, degenerating under irritation, initiate or take part in a renewed suppuration.

Some of the most striking instances of residual abscesses may be found in connection with diseases of the spine.

A patient about 40 years old had, as was supposed, acute pleurisy; but it may be believed that, whether with or without pleurisy, she had acute caries of the spine, for when she had recovered from the pain and other severe signs of her malady, a very prominent angular curvature of the lower dorsal part of her spine was found. She remained in feeble health with various evidences of scrofula, but no new disturbances appeared at or near her spine till about six years after the formation of the angular curvature, when a large lumbar abscess formed. Its formation was attended with very little disturbance of the general health, and it remained nearly stationary for nearly two years and then disappeared and gave no further trouble. Subsequently a scrofulous necrosis of the tibia ensued, and about a year later death occurred in acute bronchitis.

I suppose that in this case the abscess formed in or about the residue of inflammatory products which had been at rest for six years. The supposition is justified by similar but clearer cases.

A lady about 30 years old had well-marked angular projection of the last two lumbar vertebræ and a psoas abscess, which extended far down the outer part of the thigh, and might be estimated to contain at least two pints of pus. She had not suffered severely during the progress of the disease, but was very weak and wasting. I advised her to remain in perfect and constant rest on a couch, and to be carefully nourished, and kept as nearly as possible in good general health. At the end of two years, during which this plan was carefully carried-out, the abscess, having slowly diminished, had disappeared. Nothing could be felt but what might be considered shrunken and hardened abscess-wall, and the patient was fat and strong. She resumed active habits of life, and among other feats of good health walked to the summit of the Righi and some other Swiss mountains. Thus she continued well and vigorous for four years; then she had a severe and tedious bronchitis, and became very weak, and an abscess as large as the previous one quickly formed. Again she rested for two years, but with no other advantage than that of regaining the strength lost during the bronchitis. The abscess slowly increased, but with very little constitutional disturbance; and at the end of two years and a half from its appearance, it opened spontaneously and discharged. It is still, after more than two years, discharging: but the general health appears sound and recovery most probable.

The same may happen after disease of the spine in children. I saw to-day (July 23, 1875), with Mr. Coulson, a young lady, 22 years old, who had, when 5 years old, disease of the dorsal spine, producing large angular curvature and paraplegia. She recovered after about five years, and remained well for twelve years, when, after a fall, abscess appeared by the side of the spine and discharged a very large quantity of pus and 'gritty' matter.

A gentleman about 20 years old had what was believed to be acute pelvic or iliac inflammation, but, after some peril of his life, recovered and was able to practise actively in the law. Twenty years afterwards he began to suffer with various intestinal distresses, and with pains in the back and limbs, which, as he watched and described them very scrupulously, led to his being thought hypochondriacal, till a large abscess appeared in the upper part of his right thigh. After this a lumbar abscess also appeared, and discharged into the intestine while that in the thigh discharged externally. He slowly wasted with hectic and after about two years died: and the examination showed that the abscesses were connected with old carious disease of the bodies of the lumbar vertebræ. The carious bone had become hardened and smooth, and bridges of new bone had formed connecting the bodies of the vertebræ, which were so hard and compact as to leave no reasonable doubt that they were formed during and after the illness which occurred more than twenty years before death, and which had been followed by at least fifteen years of health and apparent soundness of textures.

The state of parts in the intervals of suspense in these cases, as well as much of the general history of residual abscesses, is illustrated by a specimen in the Museum of the Hospital.[1] It shows two psoas muscles with cavities occupying the place of their whole interior substance. The cavities, walled-in by the thin remains of muscular substance, and lined by thin membranes, were filled with the half-dry remains of pus. Externally the muscles appeared healthy, except in being pale; they were of natural size, and the adjacent structures were all healthy, unless for a very slight superficial roughness of the body of one lumbar vertebra.

The history of this case is not known: the specimens were taken from a body sent to the dissecting-rooms; yet it is plain enough that two psoas abscesses were formed, that they failed of being discharged, and that the retained pus withered and became half dry and obsolete; and it s equally plain that parts left thus unsound must have een very susceptible of fresh inflammation, and if in-amed would have become the seats of residual abscesses, ch as formed in the cases I have related.

Collections of withered and half-dried pus, similar to ese, may be found not rarely near joints long ago iseased but now quiet. They are sometimes seen during xcision of the knee, especially in cases in which the peration is done, not for any great severity of disease, ut for repeated disabling relapses of inflammation in a oint without evident suppuration. Similarly, an abscess, ong quiet, but with pus little changed, was found in the ollowing case:—

A woman nearly 30 years old, in good general health, was admitted under Mr. Stanley with a circumscribed swelling over and above the left sacro-iliac symphysis, painless and elastic. It was thought to be a fatty tumour, but the operation begun for its removal let out pus from a cavity leading, by a narrow track, to the hip-joint. Disease of this joint had existed twenty years previously, and had subsided, without apparent suppuration, after a year's rest. The patient had remained lame with stiffness of the joint, but with no other distress; and the abscess had not been observed for more than two years before it was opened.

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[1] Series V., No. 30, represented in the *Hospital Reports*, vol. v. pl. i.

Cases of residual abscess such as these are sometimes the cause of disappointment in cases of diseased joint, especially of diseased hip-joints, apparently repaired without suppuration, and remaining, to all appearance, well for one or more years.

A woman 25 years old, healthy and strong, came with abscess over the left hip-joint. When 11 years old she had disease of this hip, followed by nearly two inches shortening of the limb. At 18, after a very long interval of apparent recovery, a swelling formed under the sheath of the femoral vessels, and now at 25 it contained half a pint of fluid, which one could not doubt was pus. The swelling was painless, and was slowly increasing without any disturbance of the general health. It was left for spontaneous discharge.

A student, 20 years old, related that he had often, in early life, had scrofulous disease of the cervical glands, and when he was 13 had inflammation of the left hip-joint, which, without apparent suppuration, was followed by shortening of the limb to the extent of about three inches. Of these three inches about half was due to defective growth of the limb, the remainder to ulceration r absorption of the head and neck of the femur. But he new-formed joint, if such there was, was freely move-ble and so sound that, for the last five years, he had een constantly gaining strength in the limb and living ctively without pain or illness.

During the last ten months he had observed a gradu-lly increasing swelling in the upper and outer part of the igh, but it gave no pain or trouble till, within the few ays before my first seeing him, the skin over it inflamed. he swelling felt now like a chronic abscess pointing, and fter a few days' treatment was punctured. About ten unces of thick pus were let out. No fever or other erious disturbance followed, and the abscess-walls gra-ually contracted, leaving a sinus four or five inches long ading towards the remains of the acetabulum. To heal is, tincture of iodine was injected. Three days after-ards rigors and a sharp attack of fever ensued, and ese were followed by swelling and pain about the sinus, nd then by a copious discharge of 'chalky' matter and ick pus.

A large quantity of this chalky matter, which could nly be regarded as a residue of pus formed five or more ears previously, in the earlier stages of the disease of the int, was discharged with fresh-formed pus and small agments of cancellous bone. After many months the ischarge diminished, and only a long sinus remained; ut signs appeared of tuberculous disease of the genital nd urinary organs, and with this the patient died—about ine years from the first indication of disease of the hip-int, and about three years from the first appearance of e residual abscess.

Another group of cases which I believe may be referred to residual abscesses are found among instances of necrosis of the interior of long bones. Two remarkable examples have lately been in the hospital.

In February last a woman, 38 years old, was in Sitwell Ward under my care, with what I believed to be abscess in the head of the tibia. There was general swelling at the part, with heat, and at times such pain as the patient called 'frightful,' and 'agony.'

When she was 10 years old—that is, twenty-eight years before admission—she had inflammation of the leg in consequence of a fall, and this was followed by exfoliation of several small portions of the upper part of the tibia. They were discharged through abscesses or sinuses which remained open for five years, and in or about which many attacks of inflammation occurred. At the end of these five years the patient appeared well; and so she remained for twenty years, leading an active life and feeling no pain or distress in the limb. Three years before her admission, in consequence, probably, of over-fatigue, the leg began to be painful and slightly swollen about the upper part of the tibia; and from this time onwards she suffered, especially in winter, from the fierce attacks of pain for which she came to me.

Shortly after her admission, I perforated the head of the tibia at the place of most intense tenderness, close by some of the scars of the openings from which sequestra had been discharged. The drill entered a small abscess-cavity and a few drops of pus escaped. The operation was followed by complete release from pain.

In the next bed to this patient was a girl 13 years ld, who had had similar necrosis in the upper part of the bia following injury five years previously. At various mes sequestra had been discharged or removed: then ollowed an interval of apparent health, and then abscess, uch as might be called residual, in the cavity that had ontained sequestra. This abscess was perforated and lowly healed.

In 1860 I saw, with Mr. Edgar Barker, a lad 14 years old who, fifteen months previously, had acute periostitis and necrosis of both tibiæ at and about the unctions of their middle and lower thirds. I removed portions of the inner layers of the walls of both the tibiæ: he sequestra being almost as symmetrical as the disease ad been: both lying in similar cavities in the walls and with similar cloacæ. The wounds healed favourably and ll appeared well for nearly seven years.

At the end of this time, the patient's general health aving been much reduced during residence in China, bscess slowly formed at the lower part of the right tibia, nd I had to perforate it. The abscess cavity was evidently in or very near that from which the sequestra were removed seven years before. The wounds of the operation healed, but the tibia is still frequently inflamed.

In none of these cases did I find distinct residues of pus in the cavities from which sequestra had been removed and in which, long afterwards, suppuration ensued. Yet it is highly probable that, with stricter search than is possible during an operation, such residues would be found: for the condition of sequestrum-cavities, with rigid walls and suppurating linings, is just that in which we might expect an incomplete filling up with new tissue, and remaining spaces filled with residues of pus.

Many other cases might be cited of residual abscesses with histories and characters closely resembling those just related. Thus, in lymphatic glands remaining large and indurated after scrofulous inflammation in early life, it is not rare to see, many years later, fresh inflammation followed by abscess and discharge of thick caseous and calcareous matter, the residues of the earlier inflammatory formations. And by the rectum, hardnesses, remnants of inflammation threatening or producing abscess, are nearly sure to suppurate, though many years of apparent quietude may elapse. I have thus known an interval of 14 years elapse between the healing of an abscess by the rectum and a renewal of suppuration in the residue of scar and unsound tissue which it left; and in another case 10 years' interval of apparent health passed between a first and a second abscess, and 12 years between the second and the third.

Taken together, these cases may suffice to illustrate the general fact that abscesses are very apt to form in the seats of inflammations long past, especially where residues of pus remain. Such residual abscesses may form, as in the seats of past necrosis, with all the pain and constitutional disturbance commonly attendant on acute abscesses; but much more frequently they form slowly and without pain or fever or any other distress. In these cases they acquire great interest from the difficulty of diagnosis. They may resemble bursæ or fatty or fibro-cellular tumours, and only a carefully ascertained history of the ase may suffice for their discrimination. On the ground f history, a residual abscess may be suspected whenever swelling, not altogether unlike an abscess, appears in or ear a part that has long previously been the seat of an flammation, especially if it appears or greatly increases on after anything that has impaired the general health.

In the treatment of residual abscesses, no other rules eed be observed than those generally accepted for the eatment of ordinary acute and chronic abscesses. I ave only once seen a residual abscess disappear without ischarge; and the probability of such an event is so ight that I would rather promote than retard their ppuration. But as to the time and manner of opening ch abscesses, and the after-treatment, the general rules r the management of ordinary abscesses may suffice.

Many of the cases I have related are instances of the ry long time during which a part once damaged by flammation may remain unsound: and the disappoint-ent felt on the occurrence of a residual abscess may, some, seem to cast discredit on the practice of per-itting or aiding the absorption or drying-up of chronic scesses connected with disease of spine or joint. But e discredit would not be just: for many patients in hom such abscesses have disappeared have never suf-red after-consequences: and, so far as I have yet seen, e healing of discharged residual abscesses is quicker, d attended with much less disturbance, than the heal-g of first abscesses of the same size and in similar tuations.

ON DISSECTION-WOUNDS.

The subject of dissection-wounds has, of late years, seemed less important than it was thought to be some forty years ago. When I was a student, it was believed that such wounds were not rarely fatal, and that frequently they led to severe disease. Now, they are often made light of. My recent illness disposes me to think this levity misplaced. It is very improbable that there should be any change in the virulence of poisons generated in the dead body; and if there be any change in the consequences of inoculation with them, I should think it due to the changes in the manner of treating them. In my student-days the first signs of inflammation following such wounds were generally treated with leeches, purgatives, spare diet, and other depressing means; now, as for many years past, the prescription is good food, wine, rest, and, above all, fresh air. You may be certain that this is the better prescription; and I believe that if I could have availed myself of the whole of it, especially of the last two ingredients, I should have averted most of the troubles that I have lately suffered.

Let me now speak to you about these troubles. And, first, as to their source and the conditions on which they epend. The material with which I was infected was in e dead body of the patient on whose case I last lectured.[1] e died after lithotomy, with acute cellulitis at the back the pelvis, and with acute pleurisy; both of which, I elieve, were of pyæmial origin. The grounds for this elief I stated to you when, at the last lecture, I showed ou the morbid structures removed after death. I refer o it now only that I may remind you of the probability hat the inflammatory products of pyæmial disease are specially virulent after death. The most dangerous examinations appear to be those of women who have died with puerperal peritonitis; and most of the cases thus named are pyæmial. I can only suspect that the material which poisoned me was in the pleuritic fluid, in which my hands were long soaked; but what the poisonous material—the virus—was, neither this nor any record of similar cases enables me to tell.[2]

Whatever the virus was, it soaked through my skin; I had no wound or crack of any kind. Mr. Young, who began the examination, cut himself and suffered no harm. I had a sound skin, but one not impenetrable, and through it the virus worked its way. Mr. Young did what I advise you to do in any similar case. He washed his hands, sucked the cut part, made it bleed freely, and then took care of himself, and did not rub the cut part with nitrate of silver. He thus reduced his risk to less than that of the absorption of virus through sound skin.

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[1] It is recorded in the *Lancet* of May 27, 1871, p. 711.

[2] A sad instance, in proof that it is not any ordinary decaying or decomposing animal matter which thus poisons, has lately occurred. One of the Museum-servants in the College of Surgeons, who had rarely passed a day during several years without frequent contact with animal bodies in all stages of decomposition, with macerating bones and preparations in spirit, took an appointment in the anatomical school of St. Thomas's Hospital. In a fortnight he wounded himself while preparing for dissection the body of a child dead of pyæmia. In a few days he died of septicæmia.

This absorption is generally spoken of as if it were a strange and rare fact. Rare it may be, but strange it is not; for thus it is that, most commonly, the poison of chancre passes through skin and that of gonorrhœa through mucous membrane, and thus that the irritant matter of cantharides and other skin-irritants passes to the cutis, and from it may be absorbed. A wound or a crack that exposes a vascular surface is doubtless very favourable to infection by any virus; but it is not essential; I wish it had been and were still so.

Thus, then, this virus passed into me; and I will tell you presently some of the mischief that it did. But first let me say that this mischief would not have happened but that there was in me something that made my blood, or some of my textures, susceptible of such diseased processes as the virus could excite. For not all men can be made ill by a virus from a dead body, nor can the same man be made ill at all times; but there must be what is called a fitting soil for the virus to work in. We know no more what this soil is than we do what the virus is; we have to use figurative expressions; but we need not doubt that they imply facts, and that, for any living body to be made diseased by a dead one, there must be certain living materials which can be diverted by the dead ones from their normal relations and turned into a morbid course.

A chief interest in reference to these various susceptibilities of the influence of virus from dead bodies is, that one may become insusceptible. They who are day after y engaged in dissections or in post-mortem examina- ns, usually acquire a complete immunity from the rse influences of the virus. They may suffer local ubles from it, and some among them may get that rious warty affection of the skin of the hands or fingers ich Dr. Wilks described in the *Guy's Hospital ports*[1]; or they may lose health through the influence bad air or over-work; but they do not suffer with any fection of the lymph or blood.

Such an immunity as this I enjoyed when I was emonstrator of morbid anatomy and made almost daily st-mortem examinations. It mattered not what was e disease of which the examined body died, or what as the state of my skin, sound, or cracked, or wounded; thing hurt me; and this immunity lasted many years.

A similar immunity in the case of many fevers is ssessed by those who have passed through one attack. is, as you know, very rare to have a second attack of arlet fever or of typhus; and it is, perhaps, more rare have a second indurated chancre, or a second complete ries of secondary symptoms. In these cases we believe at the first attack alters the blood or tissues in such a anner that they are no longer susceptible of the same orbid changes as they were, even though in all other spects they appear unaltered. But I think it is not in is way that the immunity from the infections of dead odies is obtained; for though few demonstrators or thers constantly engaged in morbid anatomy escape uite unscathed, yet some do so; and these may be ough to prove that the immunity is acquired by what we may call custom. Just as a man, beginning with small quantities of strong drink, and gradually increasing them, may never get drunk, even though he may at last drink hugely too much; or as a Styrian (if the stories be true) may take arsenic till he can hardly be poisoned with it; so may anyone by custom become insusceptible of the evil effects of the corpse-poisons. It may be that his blood and tissues become less alterable by alien matters, or that the living parts acquire more power of assimilating or of excreting the dead materials that are introduced among them: how it comes to pass we cannot surely tell, but the fact of an acquired immunity seems certain.

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[1] Third Series, vol. viii. p. 263.

I wish some of you would study these immunities more closely than anyone has yet done. They are of infinite interest in physiology, for they show a striking contrast between dead and living things. *Gutta cavat lapidem* is a pattern of many proverbs that express the popular knowledge that all dead things yield to the repeated application of small forces; yet living things rather strengthen themselves against such forces. Not that this or any other contrast between dead and living things is absolute or constant; yet this, like all the rest, is worth most careful study. And of still more interest in pathology are these acquired immunities; for as yet we know scarcely more than the bare fact. Some immunities are local—such as that of which anyone will tell you who has had a long succession of blisters on the same place. He finds that at last he can be blistered there no more; yet you may blister him on some other part. And such, I suspect, is the immunity from the virus of chancre which may be obtained through frequent inoculations; but of this I have had no experimental knowledge. I think, however, that I have had personal knowledge of acquired immunity of another kind of inserted poisons—that, namely, of fleas, bugs, and the like pests of vacation-life. Let me commend this subject of study to any of you who are not unwilling to be martyrs to science. I think you will find, as I have found in some Continental tours, that for the first night you may be driven half wild by the vermin of the bed or of the air, but that after a time you care less for them, and that at last you become indifferent to them; not because they leave you alone, but because their virus no longer irritates the blood or the textures that at first fiercely resented it.

A lady, on whose accuracy I can rely, has supplied this note of the case of a person having charge of her bees: 'He began by taking from four to eight stings every two days or so. At first his arms and hands swelled dreadfully, and he had great pains. Towards the end of a fortnight the pain and swelling lessened, and by the end of (he thinks) about two months of this treatment, not taking the stings so continuously as during the first three weeks, he had no suffering or even discomfort, though once about that very time twenty bees in a fury stung him all over the face. That was two summers ago, and he considers himself sting-proof for life. I have seen his hands covered with bees stinging him, and he has never paid the slightest attention to them. The sting will perhaps leave a slight red mark, if on the face, but there will be no swelling.'

This instance may seem a trivial one; yet I believe that in it you may find illustrations of much more serious things, even of that doctrine of syphilisation of which you have heard so much.

But now observe: this immunity, it seems, may be gradually lost, just as that after vaccination may be; the influence, as the expression is, gradually wears out. My case is evidence of this. Years ago no virus of a dead body could hurt me; but then came a time in which I made few or no examinations after death. I stood by and watched others making them; and I became again susceptible to poisons that were once innocuous. My blood and textures regained the state they had before ever virus was introduced into them, and I became again more poisonable.

Think how curious a fact this, which is only one of a large class, is. Being more susceptible of morbid influences, one seems less healthy; but, in truth, one has become more healthy. Just as after vaccination, or after scarlet fever, one's blood or textures, or both, being so altered that the same poison will no longer act on them, seem the better for the change; yet they are morbidly altered.[1] And then, for years afterwards, by the exact assimilation of the nutritive process, they are maintained in the same morbid state; like a scar which, useful as it is, is yet a morbid structure. And as a scar, if not too deep, gradually wears out—that is, gradually reverts to the healthy skin-structure,—so is it with the blood and

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[1] Some opponents of vaccination have used this and a similar expression in my Lectures on Pathology as if they implied a mischief in vaccination. None but a silly or dishonest person could so use them; but, with a very few strange exceptions, it is only by such persons as these that vaccination is opposed.

:tures of the once infected person. Recovering their tural condition, they become again susceptible of in- :tion; becoming again healthy, they become what may :m weaker, and are more liable to disease.[1]

Think, again, of the long time during which facts like ese prove that a process of recovery from disease may ntinue before it is perfect. The years through which man must pass before he becomes liable to a second tack of these diseases tell the time that is required for s complete recovery from the first. Let the fact teach u both patience and hope in your treatment of the isequences of disease. It makes me believe that I ght now, with perfect safety, examine any dead body atever.

Now let me tell you, with commentaries, what the us did in me. The examination was made on February and after it I finished a long day's work, feeling un- rmed. On the 5th, which was a Sunday, I felt not but tired, and I spent the greater part of the day idly, ling asleep over good books. On the 6th I lectured, the morning, on the morbid structures obtained from e examination, and the theatre was, as usual on Mondays in the winter, very cold. I was chilled and very tired; but a heavy day's work had to be done, and I did it. I had observed three or four small pustules on my hands, especially one on the back of my left hand, but they caused no discomfort, and I had no suspicion of being hurt till about five o'clock, when I felt my left axillary glands tender, and could not press my arm against my side. At half-past eight, when I got home, I was cold and ill; the mischief had begun.

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[1] The circumstances of an illness which Dr. Symes Thompson suffered ny years ago, and which he has described in the *Lancet*, June 24, 1871, y illustrate this point. When he was Pathological Registrar at King's lege Hospital he was constantly exposed to the various contagious fevers , at post-mortem examinations, to the poisonous fluids of dead bodies; so long as he remained at his post, he escaped all infection, although his eral health broke down from over-work. But on his return, strong and l, from a holiday in the pure air of the coast, he had so lost this immunity ; he was immediately attacked with scarlet fever in a severe form, and with erysipelatous inflammation of the hand and arm, and mischief in axillary lymph-glands, following a scratch on his finger at a post-mortem mination.

I mention these things that I may illustrate, as I have often before done, the influence of fatigue in developing disease, or in at least making one susceptible of it. I can be as sure as of anything which has not occurred, that if I could have rested for two or three days after the insertion of the virus, it would have done me little or no harm. I cannot tell you whether it is by mere diminution of a normal power of resisting changes, or (as Dr. Carpenter has shown to be more probable) by the production in the fatigued organs of some material on which morbid poisons may multiply or flourish; but you will find in every day's practice that fatigue has a larger share in the promotion or permission of disease than any other single casual condition you can name.

Thus, then, I was prepared for receiving injury, and the injury was supplied in some material of this dead body. And I repeat that this material was probably something special enough to be called a virus or poison; for although any decomposing organic matter may in some persons give rise to the worst forms of blood-poisoning, yet I have no reason to think it would have done so in me Not a day had passed for many months with-t my hands being in contact with pus and other caying or decomposing organic matters; yet none of ese poisoned me, though I was often as much fatigued when I fell ill.

I wish that I could tell exactly all the signs of illness at I so anxiously watched; but during acute disease e cannot record, and after recovery one cannot well member the daily progress of a case. I can only tell e general consequences of this poisoning.

The first thing observed was a few small pustules on e hands, very trivial-looking things, which appeared on e day after the examination, and in the next week or n days dried without discharging or causing any local ouble. I think they were only local effects of the mply irritant fluids of the body, or of the carbolic acid il, with which I had uselessly though thoroughly rubbed ny hands before beginning my part of the examination. see no reason for supposing that the material which oisoned me was from any of these pustules.

The first sign of the general poisoning was (as I have aid) the pain in the axillary lymph-glands. No lymph-essels could be seen or felt up the arm at any time; the bsorbed material traversed them, but did not irritate them; but the glands enlarged, and became painful to a degree far surpassing the swelling or any other sign of inflammation in them. I do not know whether this exceeding painfulness was due to something in the poison, or was dependent on some peculiarity in my nervous system. have seen it in one other case of poisoned wound, in which, as in mine, it indicated no great severity of inflammation in the glands. With me it slowly diminished, but did not quite cease till I was nearly well again, although no considerable morbid changes took place in the glands. They were large and painful; nothing else.

Next after this affection of the axillary lymph-glands came widespread inflammation of cellular tissue. But before saying more of this I ought to tell what may have had some influence in determining the course of my case—namely, that my axillary glands were already damaged, and may have been less penetrable by fluid than they should be. More than thirty years ago, when I was a student, I had an irritable large pustule on a finger, due, I think, to some irritation in dissection, and this was slowly followed by suppuration of my left axillary glands. After discharging for many weeks, it healed with a deep scar and shrivelling and partial calcification. Thus damaged they may have too much hindered the course of the absorbed fluid; but I doubt their doing so, for I have never been conscious of any obstruction in them; and in other cases of patients with healthy lymph-glands the same inflammation of cellular tissue as I had occurs.

This inflammation, which became evident four or five days after the infection, extended quickly from the axilla up the left side of the neck, over and below the clavicle, and down the back nearly as far as the ilium. Observe the range within which the inflammation was limited, for in this, as in other cases, it was in the range of lymphatics directly, or not far from directly, connected with the lymph-glands first affected. A frequent site for such cellular inflammation is down the side of the chest, or over or beneath the pectoral muscles. Thus it was with Mr. Bloxam, who was poisoned about a fortnight after e, and in whom acute pleurisy with effusion occurred the same side. But, so far as I know, cases do not cur of similar inflammation on the opposite side, or parated far from the lymph-glands corresponding with e poisoned part, unless it be at a later period of illness, hen pyæmia is established. This seems to be a point f distinction between these dissection-poisonings and yæmia; their effects are at first, however severe, omparatively limited to the part poisoned, and to the ymphatic vessels and glands, or to the cellular tissue, early in relation with it. They may lead to pyæmia, ut they do this only by secondary changes, or, as it vere, by some accident.

The range of cellular inflammations in these cases, ollowing, as they do, on the affection of the axillary lands, seems to indicate that they are due to arrest of ymph in the affected parts, and to its being poisoned by eflux from the glands. Thus poisoned it would at once fect the cellular tissue in contact or close proximity, nd hence would be derived the spreading inflammation, uch like phlegmonous erysipelas, with sloughing or dif-use suppuration.

In my case the inflammation, at first widely diffused, radually concentrated its effects in two places—first at he back, nearly over the angle of the sixth rib, where uppuration was evident about a fortnight after the first ppearance of the swelling, and, about a week later, nder the edge of the trapezius, just above the level of he clavicle. Both these abscesses were freely opened. he first was seated in the deepest part of the subcuta-eous cellular tissue, and the second under the cervical fascia. The first suppurated very freely; the second scantily. Both healed soundly in five or six weeks from the time of opening them.

The position of this second abscess deserves notice, for it was probably due in part to the old damage of the axillary glands, of which I have already spoken. It was such an abscess as might have pointed in the axilla, and I always felt as if it would do so, for hardness and pain could always be detected there. But it seemed as if the axillary tissues would not yield, and therefore the abscess extended upwards, above the apex of the axilla, to the subfascial tissue beneath the edge of the trapezius. Both these abscesses were opened early—that is, so soon as fluid was clearly discovered in them. And I felt the comfort and utility of this practice; for though they had given me very little pain, and had been soothed with poultices, yet they seemed to keep alive my fever, and especially before the pointing of the second I had chills and exhaustion, which were evidently remedied by its being opened. In the opening I enjoyed the safety which I have often conferred on others by the adoption of Mr. Hilton's plan. The abscess lay very deep, and was very small, under the edge of the trapezius, and with integuments and cellular tissue so thickened over it that all the landmarks for incisions were lost, and the district was one in the depths of which a knife, however skilfully used, might have given me serious trouble. The director penetrated the abscess safely, and the forceps sufficiently dilated the opening, and I had self-evidence on which to urge you to use Mr. Hilton's plan in all operations on abscesses in dangerous regions.

After the opening of the abscesses the infiltration of he cellular tissue about them cleared up slowly, very owly; and, more than once, patches of thick œdema ppeared over the left ilium as if suppuration would take lace there; and when erysipelas came on there was uch more than usual œdema with it, as if there were till some hindrance to the free movement of the lymph.

The general illness that attended these suppurations was not severe. When it was evident that abscess would form—that is, a fortnight after infection,—I was sent to Norwood, and with the fresh air and quiet of the place, I gained strength, and could eat and drink well, and digest very well, and seemed floating into convalescence. But just before the evident suppuration of the second abscess, I had chills every day, and after them heat; and with these great loss of power and general distress—distress so keen that it seems strange that I should now be unable to describe it, or even clearly to remember it.

This general illness, this constitutional disturbance, was, I believe, the beginning of erysipelas. But before speaking of this, let me tell that the pus from my abscess appeared to have more irritant properties than ordinary pus. For my children's nurse, who made and changed my poultices, pricked her finger; and this was followed by very acute inflammation and suppuration, extending from the puncture over all the hand and forearm. The same thing happened, through a similar accident, to Mr. Bloxam's nurse, one who was habituated to pus of all ordinary kinds, and had not suffered from it.

Of the erysipelas that affected me after these abscesses, beginning about a month from the time of infection, I need not say much, for it had no remarkable feature, unless it were in the degree of subcutaneous œdema which predominated over inflammation of the skin, and remained very long. Beginning near the wound in the neck, the erysipelas spread slowly over the chest and back, down the left arm, and over parts of the thighs. The eruption was much more extensive on the left side than on the right; it slowly cleared up, and after desquamation no trace of it remained, unless it were in a weakness of the minute blood-vessels of my arm; for after my bath, for many weeks, the affected part of this arm appeared dusky and mottled.[1]

It was during the erysipelas that my general health suffered most: but my recollection is not clear about anything but the feelings of intolerable restlessness, which nothing but wine or morphia would tranquillise, and of the interest with which for many days I watched the progress of my own case, fancying myself an intelligent observer. At last, after the erysipelas had been extending for about ten days, and at the end of nearly six weeks from the infection, there came what seemed to me like a crisis. During the night in which my pulse and temperature were at their highest I had a profuse sweating and a profuse flow of urine, such as I never had in my life before; and next day my pulse and temperature had come down to what may be deemed safety-points, and I was conscious of returning health.

In the treatment that I received during the erysipelas, am sure that quinine was very useful. I generally took ree or four grains of the hydrochlorate three times a y, and it always (I think) lowered my pulse, and diminied my restlessness and (I believe) my temperature. d I wish I could tell the comfort that morphia gave —whether in bringing sleep, or in changing the unrest at always increased towards night into a happy and mplacent wakefulness almost as refreshing as sleep. It as well that pleasure unnaturally obtained should have penalty; and this was in the dryness of mouth, which emed due to a total suspension of the secretion of saliva, d which became at last even less tolerable than restlessess. Locally, collodion, freely applied as soon as an rysipelatous redness appeared, gave great comfort. It id not hinder the spreading of the erysipelas; but it elieved the itching and heat of the eruption, and it preented the horrid itching of the desquamation, which was tense, and was renewed for many days on exposure to ir, at every place to which the collodion was not applied. hese things were certainly beneficial; but I suppose that hose which most helped me to a safe passage through the lness were, a judicious moderate use of food and wine, nd very wise and gentle nursing.

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[1] Even now, after eight years, a cold bath makes the left arm look more dusky than the right, though I am not conscious of any other difference between them.

This erysipelas, it may be believed, was part of the ffects of the poison of the dead body—an issue of the lood-poisoning. Not such, I think, was a pneumonia ith which I suffered twice, and which added greatly to e risk and length of my illness. This was, probably, ersonal; due only indirectly, if at all, to the poison—due ither to the susceptibility of my lungs to the inflammary process. For I had had acute pneumonia five times during the eighteen years before this illness. All these attacks occurred after severe over-work, with deficient food and exposure to cold; and the manner in which they have cleared off, leaving my lungs unimpaired in structure, has made it nearly certain that they were rheumatic or gouty. But, however this may be, the pneumonia, of which one attack commenced only two days after the infection, and the other a week after the disappearance of the erysipelas, must be ascribed to me rather than to the poison. They passed through their usual course, and left my lungs sound again; but I ask your attention to them as an illustration of one of the ways in which a specific disease may be complicated or modified by the personal constitution of the patient. Here was an instance of what one may call a specific poisoning; and one of the first things following it was pneumonia. Associated as this was with evidence of poison in the lymph-glands, it might have been thought pyæmial, or in some way due to the specific poison in the blood. Yet it was only such a pneumonia as I might have had without having been poisoned, or such as might occur in me in any feverish illness from whatever source.

Keep such facts as this in mind. They show that there is no disease so specific but that its signs may be confused or complicated with the things that are peculiar to the patient. Syphilis is a specific disease as sharply defined as any, but its course and appearance in a scrofulous man and in a gouty one are very different. Vaccination produces a well-marked specific disease; but in one patient it may be followed by inflammation of lymphatics, in another by eczema, in others by various other troubles:

t all these are due in only a minor degree to the vacci- tion; they come out from the personal constitutions of e several patients which are disturbed by the vaccina- on, as they might have been by anything else producing me slight fever.

This is not a mere question of doctrinal pathology. It is among the first necessities for success in practice that, in the several phenomena of a disease observed in any patient, you should be able to estimate what belongs to the disease and what to the man. A farmer may as well expect success if he sows his fields without regard to their soils or to the weeds that may 'of themselves' come up in them, as one of us may expect it if we treat diseases without exactly studying the constitutions of those in whom they occur.

Thus I have given a sketch of my three months' illness, and some of the thoughts which it suggested to me. But I ought to say that my case showed only one of many forms of disease that may be produced by the poisons of dead bodies. The suppuration of lymph-glands, which I had many years ago, is another. But besides such as these, you may find cases of trivial local inflammation; of direct and simple erysipelas; of spreading, suppurating, or sloughing inflammation of the cellular tissue of the hand and arm; of pyæmia; and of the fiercest septicæmia. And it is remarkable that different effects may be produced by the same poison acting on different persons. Mr. Erichsen mentions a case in which six students were infected by the same body; 'two had suppuration of the areolar tissue under the pectoral muscles and in the axilla; one was seized with a kind of maniacal delirium; a fourth had typhoid fever; and the other two were seriously though not dangerously indisposed.' I advise you to read-up the subject in his *Art and Science of Surgery*.[1] He has given an excellent account of it; and so has Billroth in his and v. Pitha's *Handbuch der Chirurgie*.[2]

Sir William Lawrence used to say that he had not known anyone recover on whose case more than seven had consulted. Our art has improved. I had the happiness of being attended by ten; Sir Thomas Watson, Sir George Burrows, Sir William Jenner, Sir William Gull, Dr. Andrew, Dr. Gee, Mr. Cæsar Hawkins, Mr. Savory, Mr. Thomas Smith, and Mr. Karkeek. In this multitude of counsellors was safety. The gratitude I owe to them is more than I can tell—more than all the evidences of my esteem can ever prove.

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[1] Vol. i. p. 151, 5th edit. 1869.

[2] Bd. i. Abth. ii. Heft ii. p. 79; Erlangen, 1867.

QUIET NECROSIS.

The ordinary phenomena attending and following necrosis are well-known and described; the inflammation of all the textures about the dead bone, inflammation attaining an extreme intensity, spreading far, leading to suppuration, and attended with fever as acute as itself. In the midst of local inflammation, and with general feverish disturbance, the exfoliation of the dead bone begins, and usually suppuration continues till the exfoliation is complete and the dead piece is removed.

But all the essential parts of the process of necrosis, he death of the bone and its exfoliation, and the formaion of new bone, may take place without any of the ttendant phenomena of either inflammation or fever; nd the cases in which this happens, the cases of 'quiet ecrosis' as I would call them, are of great interest in oth pathology and diagnosis.

My attention was first fixed on these facts by a case which I communicated to the Clinical Society, and which published in the Society's *Transactions*, vol. iii. p. 83.

Emma L—— aged 19, a general servant, was admitted to St. Bartholomew's Hospital under my care, on October 12,

1869. She was well nourished and muscular and, except in being rather pale, looked healthy. Her complaint was of severe pain in the left knee, for which she had been under treatment for a month. Her mother died of heart-disease, her father was rheumatic, she herself had been healthy till this pain in the knee set-in.

The knee-joint was very slightly swollen, with fluid in its cavity, but not hot or tender. What seemed more important was that a hard swelling of which the patient knew nothing nearly surrounded the middle of the shaft of the femur. This swelling felt of nearly oval form, about six inches in length; it was in every part very firm, and tense; hard pressure on it was very painful, especially at its middle part. All the textures of the thigh appeared quite healthy; no part of it felt hotter than another; no veins or lymph-glands were enlarged. The pulse was rather quick; but the breathing and temperature appeared natural; there were no signs of fever or general disturbance, and, but for the pain of her knee, the patient would have thought herself well. She could give no account of the swelling round the femur, except that it might be due to her frequently breaking thick pieces of wood across her thigh.

In the belief that the swelling round the femur was due to periostitis, the patient was directed to remain always in bed, to take three grains of iodide of potassium three times a day, and meat diet; blisters also were to be applied over the swelling often enough to maintain a constant slight inflammation of the skin.

At first some benefit seemed to be derived from the treatment; the swelling became rather less, and was not so tender on pressure. But the improvement was of short duration, and on December 2, the doses of iodide of potassium were increased to six grains, and a fortnight later to nine grains, three times a day. On each of these occasions the pain and swelling were for a few days diminished; but no real advantage was gained, and after being under treatment for three months the condition of the affected parts was almost exactly the same as when the patient was admitted. The pain in the knee had continued

ery little change, but the swelling of the joint had sub-
The general health also remained unaffected; during
cle of the three months she had not a chill, or a great
r thirst or loss of appetite. . . .

consultation it was decided that the periosteum at the
f disease should be cut through. For it seemed nearly
n that the case was one of periostitis maintained by some
ed source of irritation—pus, or ulcerated bone, or the like.
ht be a low bony growth covered with inflamed perios-
or with an inflamed bursa, or it might be a cancerous
r; but this seemed too improbable for an objection
t the proposed treatment.

January 13, I made an incision about six inches long,
outer part of the thigh, over the principal and tenderest
f the swelling. All the textures cut through down to the
surface of the periosteum appeared perfectly healthy;
was not in any of them the slightest sign of inflammatory
. The periosteum was, in the portion divided, from one-
o one-half of an inch thick, and in all its thickness dense,
white, and moderately vascular. Between the periosteum
e bone, the incision laid open a flattened irregular cavity,
hich a little blood-coloured fluid escaped, and was followed
protrusion of some soft substance like coarse granulations.
cavity, which was from an inch to an inch and a half in
meters, was a thin rough sequestrum, separated from the
f the femur, about an inch and a quarter long and a
r of an inch wide. The walls of the cavity, of which the
was formed by the thickened periosteum, and the inner
hollowed-out surface of the femur, felt smooth and velvety
overed with granulations like those of ordinary cavities
ning sequestra.[1]

e sequestrum appeared to be derived, not from the
ost layers of the femur, but from layers just within

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e condition was very similar to that of a cavity with 'subcutaneous
tions' in a case of ununited fracture.—*Lectures on Surgical Patho-*
d edit. p. 155.

In another case a boy, 13 years old, was under my care St. Bartholomew's, with a large ovoid swelling round the upper part of the left humerus, which had slowly and painfully increased for about a year. It was thought most likely to be a firm medullary cancerous growth, but the doubts were enough to justify an exploratory incision. This was made through perfectly healthy textures till the periosteum was reached, which was greatly thickened, and covered some cavities containing thickened and half-dried pus, and several small sequestra from the wall of the humerus.

The condition found in these two cases is illustrated on a large scale by a specimen in the museum of the hospital.[1]

In the right femur and the left tibia of the same person large portions of the inner layers of the walls of the shafts are completely separated after necrosis; but, in the thickened outer layers surrounding the sequestra, there are no openings for the discharge of pus. 'Under these circumstances,' as Mr. Stanley observes,[2] 'it is not to be expected that abscess and fistulous passages would form in the soft parts adjacent to the bones.'

A similar and very remarkable instance of necrosis of the shaft of the femur without suppuration occurred in the hospital last year, under the care of Mr. Baker, and will, I hope, be soon published by him.[3]

All these cases are sufficient to prove that, however rarely, the whole of the customary processes of necrosis, short of the extrusion of the dead bone, may be accomplished quietly without evidences of inflammation. By a imilar process we may explain the formation of some of he loose bodies in joints. Of these bodies there are two hief kinds. Some are abnormal outgrowths of cartilages, ormed in chronic rheumatic arthritis, or in the dendritic rowths of synovial fringes, and, as it were, accidentally etached. Others are portions of the proper articular artilage, with or without some subjacent bone, which ave suffered a 'quiet necrosis,' and been exfoliated into ie cavity of the joint.

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[1] *Museum Cat.* vol. i., Subseries A, No. 118, 119.

[2] *Diseases of the Bones*, 1849, p. 79.

[3] It is published in the LXth volume of the *Medico-Chirurgical Transactions.*

Mr. Teale[1] described this process of necrosis of carti- ige. Being ignorant of his paper I published a similar ccount of the process in the *Hospital Reports*,[2] adding o Mr. Teale's account only the fact that the microscopic ructure of these loose bodies is identical with that of rticular cartilage.[3]

I am unable to explain the conditions under which a rocess of necrosis thus widely dissimilar from that which s usual takes place. I suspect that the death of the piece f bone or cartilage is always due to violence, that the iece is killed, as a tooth may be, by a blow, and that as tooth thus killed may be ejected or exfoliated quietly, rithout change of structure or any signs of destructive iflammation about it, so may the piece of bone or car- lage. But the facts yet known are too few to be sure on his point; and so, in the question of diagnosis, there are o distinctive signs of a quiet necrosis, but the chance of s existing should be kept in mind in all obscure cases of welling on a bone.

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[1] *Med. Chir. Trans.* vol. xxxix, p. 31.

[2] Vol. vi.

[3] Some illustrative specimens in the Museum of the Hospital (Ser. ii. 84, id Ser. xxxv. 55) are described by the Editor in the *Reports*, vol. iv.

SENILE SCROFULA.

It is, I think, too often taken for granted that scrofula is almost exclusively a disease of the earlier part of life.[1] Doubtless, young persons are much more often the subjects of scrofula than are those of later years; but the old, *i.e.* people over 60, are, I believe, more often scrofulous than those between 30 and 50, and certainly are more often so than they are generally supposed to be.

The evidences of scrofula in the old are not only in certain diseases of internal organs to which a scrofulous origin may be probably assigned, but in the diseases of lymph-glands, bones, joints,[2] the spine, the testicles, and other structures which appear to be the 'seats of election' of scrofula in the young. There is not one of these structures in which I have not seen, within the last few years, instances of scrofulous disease in people more than 60 years old. The cases appear equally frequent in private and in hospital practice, and no period of life is too far advanced for them; some of the most marked have been in patients above 75: one of them was in a patient 91 years old.

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[1] The same error is in many minds respecting phthisis, even though many clear accounts of phthisis in the aged have been written.

[2] Note XXII.

The characters of scrofula in the old are, essentially,
he same as in the young. I cannot, indeed, describe
ny striking peculiarities of form or features by which
crofulous old persons may be recognised; but they are
enerally of weakly health, ready for disease, susceptible
f it under comparatively slight provocation. They tell
f weakly relatives, or of consumption in their families;
r of their having been subject to marked scrofulous
ffections in early life, and of having survived a time of
reat delicacy of health, and then passed into a compara-
ively healthy middle age.

In its local features, also, senile scrofula agrees with
hat of early life, or differs only in its yet greater slow-
ess and the more thorough degeneracy of the affected
rts. The same slow softening of textures ensues; the
me slow ulceration and slower healing, with pus con-
ining granule-masses and granules rather than well-
med pus-cells.

But, notwithstanding its likeness to so well-known a
sease as the scrofula of young persons, the senile scrofula
sometimes difficult of diagnosis. In superficial parts,
e skin and mucous membranes, the difficulty is usually
etween scrofulous affections and gouty. Between these,
believe that the diagnosis must be ensured by observing
he co-existing constitutional characters, or other marks
f disease. But this is often difficult: for gout and
rofula are often, by inheritance, so intermixed, that the
sulting condition can hardly be analysed.

In deeper-seated parts, as the lymph-glands, bones,
d joints, the difficulty of diagnosis is more frequently
tween scrofula and cancer. In the young this difficulty

seldom occurs; for in them cancer is comparatively rare in the parts in which scrofula is frequent. In the old, the lymph-glands and the bones are as frequently the seats of scrofula as of primary cancer.[1] In the old, therefore, the difficulty of diagnosis between these two diseases may be greater and more frequent than in the young; but I think that the difficulty is commonly due, in some measure, to our expecting to find cancer rather than scrofula in old persons. The regularly increasing frequency of cancer as age advances, *i.e.* its increasing frequency in proportion to the number of persons living at each advancing age, is well known: and this knowledge gives some prejudice in favour of believing that a swelling in an old person is very likely to be cancerous. Scrofula, on the other hand, is often presumed to be very unlikely. I believe that if it were generally known to be not very unlikely, the difficulty or hesitation in making out its existence would nearly cease.

Some general rules for the diagnosis, however, may be kept in mind.

In the cases of doubtful diseases of the bones or of doubtful swellings not glandular, the scrofulous affections are generally inflamed, however lowly; the cancerous are not so. Tenderness and heat are indications of scrofula rather than of cancer, and are rarely absent at and about a scrofulous bone at whatever time of life; with cancer they are present only when the diseased part is casually inflamed.

Spontaneous pain—that is, pain independent of move-

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[1] Many cases here referred to as 'cancer' would now be generally named 'sarcoma.'

it or pressure—indicates, if severe, cancer rather than
ofula; but it is a very fallacious sign, especially in the
lier periods of disease.

Redness over diseased bones tells of scrofula more
n of cancer. When present with scrofulous disease
he old it is duskier and less ruddy than in the young;
only because of the less brightness and probably
ver movement of the old blood, but because of the
per colour of the epidermis which, with its brown
nental degeneration, partially veils and shades the
our of the blood beneath it.

In the diagnosis between scrofulous and primary can-
ous lymph-glands in the old, the chief things indicative
ancer are hardness or at least great firmness of sub-
ce, close-clustering, deep-seated attachments, pain,
quick increase. The opposites of these conditions,
ecially when tenderness and external redness are
ed to them, commonly signify scrofula. In the
vical lymph-glands which, in old persons, are the
st frequent seats of both scrofula and cancer, the
er glands are most frequently scrofulous, the upper
s cancerous; the soft primary cancerous disease is
y rare in the old, and not so rare in the young; the
scrofulous disease or simple hypertrophy which is
quent in the young is very rare in the old; the can-
ous disease in the old is often secondary to some
paratively trivial primary disease; the scrofulous is
y rarely so.

Respecting the treatment of senile scrofula little need
said. I believe that whatever is useful for scrofula in
young is, not indeed useless, but less useful in the old.

As age advances, all medicines that act by increasing the activity of organic processes become, as it seems, less potent; and so iron and cod-liver-oil and iodine have comparatively little influence. Even high mountain-air and sea-air become, as age advances, less invigorating, and the more so the more the old age is attended with infirmities that hinder active exercise. As age advances rest and warmth and good food become constantly more important than any kind of air.

SCARLET FEVER AFTER OPERATIONS.

THE boy lately operated-on for stone had scarlatina; at least, an eruption exactly like that of scarlatina appeared over nearly the whole surface on the day after operation with general febrile disturbance. Two days later it began to fade, and in a few days had disappeared, and left him in about the same state that we may suppose he would have been in if no such illness had occurred; all went on well for a month, the wound was nearly healed, and he was deemed convalescent, when perhaps in consequence of exposure to cold, he had severe pain in passing urine, and evacuated with it a considerable quantity of blood from the kidneys, and tenacious mucus. Two days after this he had sore-throat, then an eruption like scarlet fever again appeared: it continued for three days, and was succeeded by desquamation. The urine in about ten days had gradually regained its natural condition, and he again seemed well. But now whooping-cough set-in, and again retarded, though it did not finally prevent, recovery.

If I had never seen a case similar to this I should have hesitated to call it scarlatina; for the symptoms of the first attack were very incomplete, and those of the second were unusual and disorderly. But I believe the case was really one of scarlatina modified by the circumstances in which it occurred: and that it may be reckoned with other similar cases in illustration of some interesting general principles.

About this time last year, when scarlatina was very prevalent, I saw six cases after operations in private practice, I have notes of four more that occurred either before or since, and I have heard of many more. By some, these cases may be supposed to have been only casual coincidences of scarlatina with surgical diseases; but if they were so, we ought to find a proportionate number of cases among surgical cases not operated-on. But this does not happen. In private practice I do not remember to have seen scarlet fever supervene in any surgical cases, except those in which operations had been performed; and in hospital-practice, I doubt whether it is more frequent among all the other surgical patients taken together than it is in those who have been operated-on. I cannot, therefore, doubt that there is something in the consequences of surgical operations which makes the patients peculiarly susceptible of the influence of the scarlatina-poison. And, together with this susceptibility, we may observe that the disease undergoes in them certain modifications, especially in the period of incubation, which is much shortened. In all the ten cases that I have noted, the eruption appeared within a week after the operation, and in eight of them within three days after it, namely in two cases on the first, in three on the second, and in three on the third day.[1] Other deviations from the typical course of scarlatina were that, in some of he cases, the eruption came-out over the whole surface t once, and on the limbs more fully than on the face and hest; in some there was no sore-throat; in others no esquamation.

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[1] Note XXIII.

The cases are not numerous enough to determine the nport of these various deviations from the type of carlatina, but that in which all of them, whether comlete or incomplete in other characters, agreed, namely, he very early period after the operation at which the ash appeared, deserves particular notice. It adds to the vidence that the appearance of scarlatina is in some way onnected with the early consequences of operations. If were not so, there would be no reason why the erupon should appear early, rather than late, after the operaon; but, so far as I have seen, it always appears early, lways within the first week.

Two explanations may be offered of this fact. Either he condition induced in a patient by a surgical operation s one that gives a peculiar liability to the reception of an pidemic or contagious morbid poison, and any one of hese, being imbibed immediately after the operation, roduces its specific effect in much less than the usual eriod of incubation: or else those who suffer with scarlatina within a few days after operations had previously imbibed the poison, but would not have manifested its effects so soon, if at all, unless their health had been exhausted or disturbed. The second of these explanations appears rather the more probable; for it is in accordance with what has been observed when many persons have been exposed to the contagion of fever and some have been afterwards exhausted by fatigue or otherwise. These have had fever; while those who rested after exposure have escaped it.

But, whatever explanation may be given, the fact of the peculiar liability to scarlatina after operations seems certain, and may be important in relation both to the pathology of the disease and to the risks of surgery.

In one of the cases which I have seen it was fatal; in another it was followed by fatal pyæmia: and I think it not improbable that, in some cases, deaths occurring with obscure symptoms, within two or three days, after operations, have been due to the scarlet fever-poison hindered in some way from its usual progress.

GOUT IN SOME OF ITS SURGICAL RELATIONS.

LECTURE I.

F I can be useful in giving Clinical Lectures after my etirement from active service in the Hospital, it can only e by trying to teach something of subjects that are least lustrated in the hospital, and are therefore least likely be taken for the subjects of lectures by my colleagues. mong these is gout in its surgical relations. Not that I lvise you to study this or any other disease in less than whole pathology; but it is only as it occurs in surgical actice that I have had much experience of gout, and, erefore, only in this limited view of it that I am likely be able to teach you anything about it.

In surgical practice one sees few cases of gout in its mplete and typical form; and of these few I shall say thing. Its special interest to the surgeon is, first, that mingles with a variety of other diseases, and with rious effects of injuries, modifying their several prosses; and next, that it appears in a large number of inor diseases, and disorders of various parts, in cases hich are either referred to as incomplete, anomalous, or suppressed gout, or more commonly are obscurely thought of as local and casual inflammations.

In explanation of this frequent appearance of the lesser forms of gout in surgical practice, we must look, I think, chiefly to its transmission by inheritance. It is thus transmitted so frequently that I think it would be rare to find one of the members of a gouty family who should live to middle age or longer without showing some indications of gout, if not during the calm of habitually good health, yet in the troubles following injury or some accidental illness. But in this frequent transmission gout is, I think, more than any other disease, modified by the various influences affecting the inheritance of morbid constitutions; so that you must be prepared to recognise it in forms deviating widely from that which is regarded as its type.[1]

Any injury may bring out an attack of gout, whether in a person who has not before had it, or, more often, in one who has often had gout, but in whom there may have been no reason to suppose that it would at this time have occurred if it had not been for the injury. Nothing can show better than gout sometimes does how exactly health is, in some persons, just maintained; how nearly balanced in them are health and disease, comfort and misery. A person on whom I could rely assured me that, within five minutes after breaking his fore-arm, while he was in what he thought good health, he had an attack of gout in his hand. So, I have known patients, who deemed themselves quite well, but within ten minutes after drinking a glass of champagne had well-marked gout. And cases are so common in which gout is distinctly brought out in a few hours after drinking beer or port-wine, that the inability to drink these things with impunity may often be counted among the evidences of a gouty constitution. Think for a moment of the precision with which in these persons health is maintained; how minute must be the change by which materials that are to others harmless or beneficial are to these as poison.

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[1] The lecture included a summary of the statements on variations of constitutional diseases given in the last essays in this volume.

People thus combustible are not rare; you may liken them to lucifer-matches; gout explodes in them whenever they are roughly injured. It may appear localised, either in the injured part or in any other; for the effect of the injury may be twofold; it disturbs the nutrition of the part on which it is inflicted, and in a less degree, or consequently, it may disturb the general health, and thus induce the occurrence of gout and its localisation in some part even more apt for it than that which is injured. Hence you may meet with two different groups of cases. In the one you find men, whom you may suppose to have been just ready for a seemingly spontaneous attack of gout, who casually hurt their feet or their hands, or wrench one of their joints, and in a few hours or in a day or two the gout appears at the injured part. In the other group are those who are injured in some part not usually apt for gouty inflammation, and in whom, while they are not yet recovered from the injury, gout appears in some distant part. Among these you may have to count some of those on whom you may have operated. Your surgical injury, together with the associated mental disturbance, will have sufficed to let appear the gout, which might else have been repressed or healthily concealed.

I have known a patient suffer a sharp attack of gout after each of three operations which he has undergone.

In all these cases the gout may appear in its ordinary and typical form, with great swelling, and heat, and pain, and may need the usual treatment, and may after some days disappear, and leave behind it no abiding mischief. But there is another and more troublesome set of cases, in which gout presents no marked signs, but seems as if it merely hindered recovery from local injuries. Nearly all gouty persons repair injuries of their joints more slowly than those who are healthy. The joints remain long subject to neuralgia, or to paroxysmal pains, or to constant aching, and to stiffness and discomfort in use. Thus, after what seemed an almost trivial injury, a limb may remain for weeks or months disabled. Now, you may have it as a rule, in practice, that gout is to be suspected—I do not say more than suspected—when, in a patient of middle or later age, an injured joint does not recover in due time. And in any such case, if there be no fever or permanent heat at the joint, and no considerable swelling, you may use exercises, or even forcible movements of the part, with frictions, shampooing, and warm douches, together with whatever may be advisable for the general treatment of ill-marked gout.

Let me say here, that in the same manner as gout may thus follow injuries of joints, so may chronic rheumatic arthritis, the worst of the instances of what are called rheumatic gout. And, especially, you should be aware of the risk that thus may ensue after injuries of the hip-joint in elderly people : for it may spoil the joint, and give rise to such shortening and eversion of the limb, as

simulate the effects of fracture of the neck of the
r. Twice have I known such cases made subjects of
actions against good surgeons, whom bad attorneys
to make liable for negligence.

hile I am speaking of some of the consequences
juries befalling the gouty, let me warn you against
se of arnica in liniments or in other local applica-
I am not sure that it is useful in any case: but I
that in the gouty it very commonly produces what
led erysipelas, or severe inflammation of the skin,
with vesication, always with intense heat and pain
rning, often spreading far beyond the part to which
nica was applied, and in this way much more trou-
ne than the injury which it was meant to cure.[1] In
gouty persons the skin seems very sensitive to all
ts; wet dressing, if covered with oiled skin, will
out pustules; almost any external stimulant will
out a kind of eczema; but of all the stimulants,
seems the worst for them.

said that gout can modify not only the effects of in-
but many other morbid processes. I might, indeed,
said nearly all. You are familiar enough with such
as gouty bronchitis, gouty periostitis, gouty inflam-
of the sclerotic or the iris. All these terms mean
me general fact: that in a gouty person an inflam-
, whencesoever derived, is likely to have a gouty
ter, and may need, whatever else may be done, a
ent appropriate to this. You may be pretty sure
t in those cases where, in persons likely to be gouty,

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ave heard of the same kind of eruption appearing on the abdomen
internal use of arnica.

the pain, instead of being nearly uniform, has paroxysms of proportionally great intensity and is altogether more than proportionate to the structural changes produced by the inflammation. Even the most intense inflammations may thus be modified by gout. To mention an extreme case, I tied lately some piles in a middle-aged gentleman known to be gouty. A few days after the operation he was attacked with a fierce inflammation of the great toe, diminishing in the daytime, and returning with greater intensity at night, after the fashion of a typical gout. Of course I took it to be gout, and so treated it; but the treatment did no good. At the end of a week a large abscess formed deep in the foot, near the ball of the great toe; and this, with other symptoms, made the case clear. It was one of blood-poisoning, an instance of one of the least degrees of pyæmia, in which the characters of the localised inflammation were modified by the gouty disposition of the patient.

It is not very rare to find gout mingled with scrofula. I do not mean in the cases of children, who, when they have chronic inflamed joints, are said to have gout, because their parents will not endure to have them called scrofulous. These are, with extremely few exceptions, scrofulous, not gouty, even though the parents may be gouty. The real minglings of gout and scrofula are found in elderly persons. In these, a gouty inflammation may drift into true scrofulous inflammation, and the risk, though it be not great, should always be kept in mind. The cases begin as unquestionable and well-marked gout: but week after week passes and, although the intensity of the gouty inflammation subsides, still the art remains over-warm, swollen, painful and unfit for se, especially it remains tender and œdematous; and at ength the case appears as one of well-marked scrofula. have seen such cases in the tarsus, carpus, metatarsus, lbow-joint; and I believe they may occur in any part. hey are among the cases which teach us in the clearest anner the need of cultivating both the power and the abit of revising our opinions. In all instances of long-tanding disease we ought to be able and ready, at any me, to begin afresh the whole study of the case; to ink of it as if we had never seen it before, or given any pinion on it; and with our new study, as if we were court of appeal, to reverse or confirm our previous ecision. I could tell many tales of errors committed hrough want or neglect of this revising power. And mong them would be some concerning this transition om gouty to scrofulous inflammation; the changed atures of the cases have been overlooked, and the eedful change of treatment has not been made: the hange, namely, to complete quietude of the inflamed art, to restraint with splints or some such means; and he change of nearly all the constitutional management.

I believe that we may hold cases such as these to be ue, mainly, to the coincident inheritances of both gout nd scrofula; and I may mention two other sets of cases, hich may be referred to the same unhappy lot in life. n the first, an acute attack of gout is followed, as any ver may be, by some evidence of scrofula. In the cond, among the cases of what I have called senile rofula,[1] some occur in old persons whose tissues have egenerated in long-continued or almost constant gout.

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[1] P. 344.

Another large group of diseases which you must study in their associations with gout are those of venereal origin. I will speak, in another lecture, of gouty inflammations of the urinary organs. I will now only advise you to observe that many cases of unmanageable gleet following venereal gonorrhœa are connected with gout; that many urethral strictures, even though they may follow similar gonorrhœa, are rather to be referred to gouty inflammation, producing thickening and contraction of the submucous tissue of the urethra, like that which it produces in the fibrous covering of the corpus cavernosum, or in the palmar fascia, and that you may refer to gout the greater part, at least, of the cases in which the same patient has in succession gonorrhœa, inflammation of joints and sclerotitis. The gonorrhœa may have the usual origin in infection; but the inflammations associated with it may be distinctly gouty; and their existence in the sclerotica as well as in joints may alone suffice to distinguish them from the gonorrhœal rheumatism (so-called) which has nothing to do with gout, and is more nearly related to pyæmia.

The influence of gout in modifying the course of secondary and tertiary syphilis is sometimes very marked. We are too ready to think that syphilis has a certain definite course, from which it deviates only by what we vaguely think of as accident or chance, or as due to the influence of some unobserved external conditions. In the later stages of syphilis, we see one person with destructive ulceration in the nasal cavities; another with rupial sores; another with chronic synovial inflammations; another with psoriasis of the tongue. They are all derived from syphilitic poison, and there is no probability that their differences are determined by differences of the poison. Almost certainly, the differences are due to the differences of the constitutions, or other personal conditions, in which the syphilis is implanted. Syphilis inoculated in a person with a scrofulous or tuberculous constitution produces a very different series of events from that which it produces in a healthy person or in one who is gouty. Success in the treatment of syphilis is often dependent on the discernment of these differences, for they affect not only the signs of the disease, but the action of the specific medicines. They do this the more the longer the duration of the case, till at last one may doubt whether, in any present group of symptoms, the greater share belongs to syphilis or to the natural constitution or personal condition of the patient. And this is one of the things that are overlooked by those who talk often of the uncertainty of therapeutics when they rather should blame the errors or uncertainties of diagnosis.

Now, respecting the treatment of syphilis in gouty persons, I do not know that any rule can be given other than the general one that, in whatever means are devised, both diseases must be had in view. I know no objection to the use of mercury in gouty persons, unless they are too old or have signs of general degeneracy of textures, or, chiefly, of the kidneys; and even in these the perchloride may be given, even in long courses of small doses, provided they can be carefully fed and well cared for. And the iodide of potassium may be doubly useful, and may serve as well against the chronic gout, as against the tertiary, or even some cases of secondary, syphilis. And it is an excellent rule in these cases, to give it in very diluted solution, whether in water, or in some of the alkaline waters most useful in chronic gout. I think I have often observed that two or three grains of the iodide given three times a day, in eight or ten ounces of water, have done more good in what I have believed to be cases of mingled syphilis and gout than three or more times as many grains in the usual one or two ounces of liquid. And I have little doubt that some of the repute which some considerable health resorts have gained for the cure of syphilis is to be ascribed to the simultaneous employment of mercury and of the various helps by means of diet, and medicinal water, and careful regimen and quietude, which are remedies for some of the forms of gout.

For ending, let me speak of the influence of gout on the course of cancer. I do not think that the two diseases can ever be said to be combined, as if in any kind of hybridity; but you will find that a gouty person who has cancer is, more than others, liable to severe and often paroxysmal pain. It may be too much to say that cancer can be the seat of a gouty inflammation; yet certainly cancers in gouty persons seem very liable to inflammations of their substance, and the pain of the inflammations is intense. The treatment of such cases must have the same double view as that of others which I have told you of: the gout must be treated, however gently; and these are among the cases in which you may give the greatest comfort by following the good general rule of advising cancerous patients to live on a rather spare diet and a very small quantity of stimulants.

LECTURE II.

GOUTY AFFECTIONS OF THE HANDS AND FEET.

In speaking of the lesser gouty affections which one sees in surgical practice, there is danger lest it should seem to be implied that a patient may be certainly known to be gouty if he be suffering with any one, and only one, of these affections. Let me, therefore, say at once that I am not certain that any one of these lesser affections is, of itself, characteristic of gout, even of the lowest degree of gout; but that which is certain is that when many of these affections are observed coincidently, or in succession, in the same person, they are as significant of gout as is any of its typical signs, even as the acute transient inflammation of the great toe or the excess of lithic acid in the blood. Of course, you will have to exercise in practice the best prudence you can in deciding how many, and what degrees, among the lower signs shall be deemed evidence enough of a gouty constitution; and you will meet with many cases of difficulty and final uncertainty. Nevertheless, it is certain that morbid constitutions may be known by the coincidence of many lesser signs, as surely as by any one or a few of their greater or more typical.

Number may be as significant as weight, and it is often by the number of signs alone that we can guide ourselves in practice. Let me illustrate this by one of the first cases which I happened to see after the last lecture.

A gentleman, about fifty years old, was suffering with acute orchitis. It had existed, with various intensity, for ten weeks, and showed all the usual local characters of an acute inflammation of the body of the testicle, with a moderate quantity of fluid in the sac of the tunica vaginalis. Of course it was easy to make a diagnosis of 'orchitis;' but this was not going far towards explaining it, or deciding how to treat it. It was orchitis from what? with what? in what sort of man? It was not from any known local cause; not from any reflex irritation from kidney or prostate; not from continuous inflammation, as during or after gonorrhœa; not from any unusual continence. It might be called simple orchitis: but really there is no disease that can justly be so called, unless it be the inflammation that may follow local injury. What, then, should it be called? Well its nature was told and its name might be learned in the previous history of the case. For many days, and long before this inflammation set-in, the patient had suffered with pain at the heel, and with cramps at night, and pain in the knuckles. They had hardly attracted his attention; but he could remember that he was annoyed in walking, and that often on awaking in the morning he felt pain darting through his knuckles, and his fingers and toes seemed stiff, so that he had a little trouble in getting them into easy movement. Moreover, two other of his knuckles were large, broad, and nodular: and frequently he had had dyspepsia with flatulence, and recently troublesome erections waking him at night. He had never had what he called gout; indeed, he denied the imputation of being gouty; but all these small things taken together were enough to prove that he was so. They made it very probable that his orchitis was gouty, and they indicated the treatment which did him good, and helped him to quick recovery.

Now, among the lesser gouty affections which one sees in surgical practice, I will take first those of the hands and feet.

It may be observed that gout is one of the diseases which affect not only, as it were, by choice, certain structures but, as equally by choice, certain places in which those structures are found. It has, in its most marked forms, some 'seats of election.' Four-fifths of the first attacks of regular gout are, it is said, in the feet; and of the later attacks a large proportion. Of the lesser gouty affections, too, the hands and feet are probably the most frequent seats; the hands, I think, as frequently as the feet, though we have nearly lost the word Chiragra, which used to match Podagra. Many of these are merely disorders of sensation, leading to no apparent organic change; many, with much less disturbance of sensation, become evident in change of shape and structure.

Among the first, the most frequent, I think, are darting and aching pains in the knuckles. After wrong foods or drinks patients may feel such pains for many hours, or on waking in the morning they may feel them, or find their fingers or their toes stiffish and unready to move. Others complain of burning soles or palms: they do not seem hot to one's touch, but the subjective sensation is of a distressing dry heat in them; and some have pain in the heel, a most significant pain, for I think it may be held as nearly certain that if a patient, who has had no injury and shows no swelling of the part, complains of abiding pain in—not merely under—but in the substance of the heel, and wishes to walk tenderly on it, he has either gout or some excess of lithic acid in his urine, or a renal calculus. The coincidence is so frequent that one cannot doubt its meaning, however hard it may be to understand it. Similarly, pain with or without thickening and tenderness of the Achilles-tendon, especially in elderly persons who have not been injured, is usually due to some degree of gout: and so are numbness and tingling of one or more toes.

All these may seem trivial things, but they are not easy to cure, and I think it is impossible to explain them. They are, therefore, well worthy of study; and in practice you may often help yourself by the knowledge that if anyone who has had these comparatively small troubles, or the greater part of them, is suffering with an acute bronchitis, an inflamed joint, an iritis, or any such disease, gout may be suspected as an element in it, and may need treatment.

Signs which are as characteristic and more permanent may be found on fingers and toes; and you *will* find it as useful to look at every adult patient's fingers as to look at his tongue or feel his pulse. They may give great help to diagnosis; they should never be overlooked.

You may observe in the knuckles two chief kinds of deformity; two chief mis-shapes. In one of them, which is especially characteristic of a typical gout, you find one or two or many of the knuckles swollen in a spheroidal or round-oval shape, often largely nodular or lobed, and fairly well-defined. They are stiffish, and often the skin over them is smooth, glossy, bald, and in the acuter stages tense and too warm. After a time the joints become more deformed; commonly bent and everted; or, very characteristically, the metacarpus and the fingers are everted, and the fingers are bent in such a way that, as they lie together, they are not flat in the same plane as the back of the hand, but in a plane sloping obliquely outwards and downwards. Often, too, one or more of the fingers are bent at their second, and extended at their third joints.

In these cases the chief seat of gout is or was in the synovial membranes and fibrous tissues of the joints, and the joints fill with fluid laden with urate of soda, which may remain in the form of chalk-stones. Of course, in the complete or advanced cases, gout is plain enough; it is often more important to recognise it in the much less marked cases; for in these it may sometimes be seen as surely though less clearly. One joint thus swollen may be diagnostic; such an one is often seen after injury of a gouty person's finger; but remember, in such cases as these, there may be some difficulty in discriminating between gout and scrofula; and, if there be, you may often rely on the history and general condition of the patient, more than on the local character of the disease.

In the other chief form of gouty affection of the knuckles, the change of structure is in the heads of the bones and the articular cartilages much more than in the softer structures of the joints. It is altogether a more chronic process, and though certainly indicative of gout, it approaches the characters of what is more commonly known as rheumatic gout or the chronic rheumatic arthritis. You will observe in it that the affected joints are not uniformly or roundly swollen, but rather are flattened, widened, nodular, and bulging at their sides, not much stiffened, not chalky. The fingers are commonly not everted, not mis-directed; but you must not expect to find any such descriptions as this more than usually correct, for between the two forms many intermediate examples may be found, and either of them may be in some measure dependent on the natural form of the fingers.

Still, allowing for variations, these large swollen or nodular knuckles are of real and useful significance, and always to be looked for and felt for, even though you may find but one. It is, indeed, not rare to find only one or two; and yet even one may be instructive, especially if they be at either or both ends of the metacarpal bone of the thumb or at the proximal end of that of the middle finger.

I have spoken only of hands and fingers. The same things may be seen at the toes, yet, I think, less frequently and clearly, and certainly less conveniently, unless in the case of the nodular enlargement of the distal end of the metatarsal bone of the great toe. This is very characteristic and, by inducing the formation of bunions, is the source of excessive annoyance.

Now let me add that subcutaneous bursæ, or at least portions of connective tissue, become loose and forming incomplete cavities over knuckles, are common in gouty persons and may help to indicate the gouty constitution. They are most frequent over the articulation between the first and second phalanges of the fore-finger. The joint itself may be healthy and rightly moveable; but he bursa over it, covered with thickened and tough kin, may make a high-raised lump, disfiguring the finger s much as the nodular enlargement of the end of a halanx. Bursæ such as these are very apt to be the eats of acute gouty attacks, and to be left by them igger, firmer, and more sensitive than ever. Some-imes, too, I think they receive deposits of urate of oda, and become like sacs full of chalk-stones.

And, lastly, an indication of gout may sometimes be ound in a little cyst, over or near a toe- or finger-joint, r on some other part of a hand or foot. Such cysts are lled with a pellucid, yellowish, tenacious fluid, which ou had better not let out and which, I think, gradually ickens.

Quite distinct from these, though often found to-ether with them, are certain conditions affecting the almar fascia and, less frequently and in less degree, the lantar. In the most common and advanced cases, you e elderly or old persons with their fingers drawn down wards the palm by contraction of the palmar fascia, nd of its prolongations past the edges of the first joints. he contracted parts of the fascia are always thickened nd hardened, and adherent both to the skin of the palm, hich is puckered and seamed at its adhesions, and to the heaths of the subjacent tendons. The third and little ingers are by far the most frequently and severely thus ontracted; but the progressive thickening and shorten-ng of the fascia bring down in time the second finger, nd even the first, though in so far less a degree that it hardly ever rendered useless.

These contractions of fingers are the final results of gradual thickening and contraction of the tissues. But the changes may be as well recognised in their early stages, and may be then as significant as in the later, even though there may appear no more than a hardening and thickening of a piece of the palmar fascia with the integuments over it retracted and dimpled where they adhere to it.

I cannot doubt that these affections of the palmar fascia are, in a large proportion of cases, due to gout; and they are remarkably hereditary; but I will not venture to say that they may not be produced by any other localised disease, and they certainly may follow local injuries. Thus, men who work with pliers which they are obliged to grip in their palms and hold tight for, it may be, the greater part of many hours a day, commonly have these thickenings and contractions. So have many who are always digging, and some who, as they walk, bear heavy weight on their sticks; and very similar contractions sometimes follow severe wounds, and deep and long-continued suppurations in the palm.

I said that you may find similar affections of parts of the plantar fascia, and with similar significance. They are rarer here and less severe; but you may ascribe to them, I think, some of the many distortions of toes which occur in advancing age, and lead to many plagues of corns and bunions. And both here and in the hands you must discriminate between these and the contractions of tendons alone. With primary contractions of tendons you find no adhesions of fascia or integument; these shorten in adaptation to the shortened tendon but they do not otherwise change. But when the contracion is primarily in the fascia, the integuments and the heaths of the tendons become as if involved in the ame changes, adherent and thickened, and the tendons horten, if at all, only secondarily and slowly.

I hope I have said enough to justify my advice that ou should examine your patients' hands as regularly as heir tongues. I might add many things about the ppearance of gouty skin-diseases on them. I pass these y; but be sure that there are facts of real value in athology and practice which a study of hands will bring o you. They are more to be trusted than are those of he physiological Chirognomonie with which it is believed hat you may discern in various forms of hands the ental characters with which they are associated: though, you will read what Carus and D'Arpentigny have ritten on this, you will not think it all fallacious; and may, at least, amuse you, while you look at hands for ns of gout, to look also for the coincidences which are rtainly frequent between some shapes of hands and ne characters of mind.

LECTURE III.

Among the lesser gouty affections which it is very useful to study in surgery are those found in the mouth and pharynx. There are many of them, and it is necessary to be clear in their diagnosis, both for due treatment and for the indications they may give of patients' constitutions.

Some persons know that they are more than usually gouty when they grind their teeth during sleep. Some when they have pain or tenderness of some of their teeth. They have not what is commonly understood as toothache, and they are not—indeed gouty people generally are not—more than others liable to decay of teeth, and the consequent pain,—but they feel at times as if some of their teeth were raised out of their sockets, and a little loosened, and their teeth are very sensitive to pressure. It is as if the alveolar periosteum were swollen and tender; but it leads to no speedy or direct harm unless it be slight wasting of the gum; and after a few days the pain subsides and the teeth settle in their places again.

Some, again, know that gout in some sharp form is at hand by some unusual coating of the tongue, or by some change of shape or feeling in it. This, I believe, is a personal peculiarity, just as in some persons a very slow pulse, or an irregular pulse, foretells coming gout, and in others a shivering or sense of cold creeping at the spine. I do not believe that there is any transient appearance of the tongue which is generally significant of gout, but there is a permanent or long-abiding form of psoriasis which may justly be called gouty. It is very like the syphilitic psoriasis. In both alike the tongue has either bare-looking purple patches or opaque white patches of thickened epithelium, with smooth glistening surfaces, hiding its natural papillary structure, unless when it assumes the ichthyotic character, in which the papillæ become enlarged, clustered, and warty. In some, the patches are diffuse and thin-edged, like opaque glistening varnish, or, as some say, like snail-tracks; in some, they are circumscribed, thicker and well defined. The tongue thus affected often burns and aches, but I think is, in the gouty cases, very rarely so painful as it often is in the syphilitic. Neither is it so commonly fissured, or so sore at the edges, or so liable to the formation of epithelial cancer at its diseased parts.

This gouty psoriasis of the tongue is one of the most troublesome affections you will have to deal with. It will justify the most scrupulous care of diet and regimen, and what that care should include is less difficult than in many other cases to discern; for there is no part more sensitive to errors of diet than the sore tongue; it resents at once ill usage. But with general treatment you must combine local; and of many things, I have found none so useful as painting the white patches with a saturated or very strong solution of chromic acid.

Among gouty affections of the tongue may be mentioned its frequent neuralgia, alarming people with fears of cancer, but, so far as I know, never doing harm or leading to any further mischief.[1]

The gouty psoriasis of the tongue is sometimes associated with similar disease of the mucous membrane of the hard palate; but very rarely with any affection of the lining of the cheeks or lips, or of the angles of the mouth, in which fact may be a help to diagnosis from the syphilitic psoriasis which often affects at the same time the lips and cheeks and tongue.

In the soft palate and pharynx you may often find some of the best marked lesser signs of gout. Among them is the large and lengthened uvula, such as, I think, you will rarely see in a middle-aged or older person unless he is gouty. It is a source of exceeding trouble to them, by the vehement and fatiguing fits of coughing which it excites, especially at night; coughing unproductive and unsatisfactory and often disturbing the pharynx to retching. You may for a time, or partially, cure this trouble with astringent gargles or lozenges. If these do not avail, you must cut off some of the uvula; but you had better leave a piece of it not less than a quarter of an inch long.

There is also a well-marked form of chronic pharyngitis which may be called gouty. The mucous membrane of the back of the pharynx, and with it that also of the palate and its arches, look thick and clogged, as if œdematous; their surface is smooth, tense, glossy and dull-coloured. They secrete more than usual mucus and are often painful in swallowing; but there is never any ulceration or intense redness or acute pain.

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[1] See p. 251.

With this condition of the palate and pharynx, or even when they look healthy, you may sometimes detect gout by an aching pain in the palate; dull and heavy and increased by any movements, especially by swallowing. The pain is often very local, as if seated in a part of one muscle; and, which is very characteristic, it often shifts from one side of the palate to the other.

And there is another sensation in the palate or the pharynx, which, I think, occurs chiefly in the gouty; a tickling on some small spot which excites the same kind of coughing as the long uvula does. The patient feels as if a crumb were irritating him, and the sensation becomes more and more intense till he must cough or be choked; and the cough is useless or worse, for there is nothing to eject. Dry cold air will often excite it; or reading or talking, or something pungent or salt.

I will not speak of gout in the inner digestive organs except to say that you will find few gouty persons who will not tell that they are often flatulent or bilious or that certain things disagree with them. This fact of foods disagreeing, whether by producing indigestion or by bringing on gouty symptoms, is so common that certain foods may become tests of gout. If a man in active life cannot drink a little beer or champagne or port wine without consequent discomfort, you may suspect him of a gouty disposition; if any of these makes his palms or soles burning hot, or makes his knuckles ache, or gives him neuralgia, or increases any of the troubles I have been speaking of, you may safely call him gouty. The reverse is not true; some gouty persons can eat and drink all things without suffering such swift punishment.

I do not know any gouty disease of the lymphatic system. It may be noted, perhaps, as a fact worth very careful study, that, among all the parts which gout affects and the wide-spread degenerations to which it may conduce, the lymphatic vessels and glands seem not to suffer.

And of disease of arteries I doubt whether any can strictly be called gouty. Some have thought that the atheromatous and calcareous degenerations may be so regarded; but I doubt it. Certainly, aneurism is much less frequent in the gouty than in the syphilitic; and senile gangrene appears not more frequent among old gouty people than among others of equal age, and is much less frequent among the gouty than among the diabetic. Gouty phlebitis is only too common; it is the most frequent form in which anything that can fairly be called idiopathic phlebitis occurs. You may suspect gout in any elderly person in whom phlebitis occurs without evident external cause.[1] The frequency of small conjunctival ecchymoses in the gouty, and of bleedings from the nose, may make it probable that they are more than others liable to disease of minute blood-vessels; but I do not know whether this has been well ascertained.

The relations between gout and diseases of the urinary organs are intimately connected with those between gout and the lithic acid diathesis, a very large subject in pathology for which I have neither time nor ability. It may be difficult to find a gouty person, who has not often excesses of lithates in his urine; and, doubtless, many attacks of gout are intimately connected with occasions of defective power in the kidneys for the excretion of lithic acid. You will, therefore, never be safe if, in a case of suspected gouty disease, you do not enquire about these things. Only do not confuse the lithic acid diathesis with the gouty; they are not the same. Many children and young people, whom you cannot reasonably accuse of gout, produce large excesses of lithic acid in the urine; and the lithates are the most common constituent of urinary calculi in the children of the poor, among whom one would suppose the gouty constitution most unlikely to occur. In the children of the middle and upper classes, in which the inheritance of the lithic acid diathesis may be expected, calculus of any kind is one of the very rarest of diseases.

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[1] See Essay on Gouty Phlebitis, p. 299.

But, to speak now only of the gouty affections which you may find in the surgical districts of the urinary organs, let the first be the cystitis. It may present all the well-described characters of an acute inflammation of the bladder from any other cause, such as that which may occur in gonorrhœa or after a mischief-making catheterism. Intense irritability of the bladder may ensue, with very frequent painful burning passage of urine containing mucus or pus and, very rarely, blood; with pain and aching diffused to the perineum and the rectum, and with pain and tenderness over the suprapubic region; with heat along the urethra and, sometimes, thin purulent discharge. You may not know the cystitis to be gouty by any of these signs; but you may more than suspect it if it have been preceded by excess of lithates in the urine, and have begun almost suddenly, even in the quiet of the night, or after an indigestion or some unwholesome food or, as by metastasis, after the subsiding of gouty inflammation at some other part. It may pass-by more quickly than any other form of cystitis; and may relapse for some seemingly trivial reason and may finally pass away and leave the bladder healthier than it would become, in the same time, after any equally severe inflammation not due to gout.

Speaking of metastasis of gout to the bladder, let me add that you may sometimes see eczema thus shift its ground. I do not know that the cases in which I have seen it were all gouty; but the fact has been clear; an eczema of the skin has quickly disappeared or become dry and pale and an acute cystitis has ensued, such as might fairly be called an eczema of the mucous membrane of the bladder.

I have spoken of gouty inflammation of the testicle. I have no doubt that there are gouty affections of the prostate; but they are very hard to distinguish from those which are not, and the only one of which I am sure is what I believe may be regarded as a gouty inflammation, quickly or almost suddenly enlarging the prostate and often producing retention of urine. It is well to suspect gout in these cases, and to use active aperients and warm baths and very gentle catheterism if you are obliged to use any. Of course gout is often complicated with the common enlargement of the prostate; but I do not suppose that the enlargement itself is often, if it be ever, a consequence or sign of gout.

The gouty affections of the urethra are various, and I believe much more frequent than is commonly supposed. Gout seems to have part, as I have said, in the cases in which gonorrhœa, inflammation of the sclerotica, and inflammation of one or more joints, coincide or quickly succeed; and it may be suspected in the cases of gleet in which relapses ensue with every increase of acidity in the urine, or after even very moderate drinking of beer or wine.

Let me say, as in passing-by, that there are few diseases in which, more than in gleet, it is essential to study the constitutional conditions of patients. When gonorrhœa is prolonged into gleet it is seldom because of any merely local condition. There may be stricture with an abiding unhealthy state of the lining membrane; or the urethra may be too often irritated by sexual excitement; but, more often, I believe that recovery is hindered by gout, or scrofula, or syphilis, or some other constitutional error or defect.

The maintenance of gleet in connection with gout and other constitutional diseases is the more important because of the tendency to the production of stricture which is associated with them and which, but for them, would be, I believe, a very rare consequence of gonorrhœa. In gouty persons the production of fibroid tissue thickening and contracting the outer layer of the urethral wall, and thus producing stricture, seems to be a process of the same kind as the thickening and contraction of the palmar fascia of which I spoke in the last lecture. Or it may be more nearly compared with that very troublesome and generally gouty thickening and hardening of portions of the fibrous sheath of the corpus cavernosum, which produces distortion of the penis in erection, and sometimes frightens with fright of cancer. Tough bands or lumps of such fibroid tissue may be felt on either side or, more commonly, on the dorsum of the penis or in the septum; and because they will not yield, as the rest of the structures do, to the erecting pressure of the blood, they hold the penis rigidly bent on them, as in a chordee. Like these, and similarly connected with gout, are many, I believe, of the toughest and most contractile of strictures, especially of those which are formed, or become worse, in or after middle life.

But it is not only in connection with gonorrhœal gleet that gout is mischievous in the urethra. Cases of gouty urethritis sometimes occur, having all the symptoms of the gonorrhœal; the purulent discharge, scalding, painful erections and the rest, but not derived from infection and not infectious. And, perhaps, with these may be reckoned the instances of much less severity in which urethritis follows the passing of lithic gravel or minute calculi.

There are few cases in which treatment of gout with regimen and medicines is more needed than in these gouty diseases of the urinary organs. But remember, besides, that abstinence from meat is very useful in the urethritis, and copaiba and sandal-wood-oil in both this and the cystitis when they have passed through the acute stage and are lingering or relapsing.

I think there is a gouty inflammation of the whole substance of the penis, attended with general swelling

p to the full size, but not the hardness, of erection.
ut I have seen too little to say much about it. I will
nly mention one or two more of the minor signs of gout,
hich you may observe in the penis. One is an occa-
ional herpes or eczema of the glans, making some
ortion of its surface bright red, florid, shining and
xcoriated; and producing a very strongly odorous
ischarge. Such changes are common also in diabetes;
ut here they are more persistent, for the gouty excoria-
ions rarely last more than a few days. Another is the
requent occurrence of troublesome erections at night.
hey are not associated with any sexual feeling; they
ccur most often during sleep, and are sometimes so
equent that for many nights in succession they com-
letely prevent sleep from being long enough to be
freshing. Such erections may occur in men of all
nds who, through indigestion or any other cause, have
o acid urine; and in these they may be only a slight
aggeration of what is natural; but in the gouty they
sometimes an intolerable annoyance. You should
scribe for them, together with the general regimen
the gouty, full doses of bromide of potassium.

LECTURE IV.

Disturbance of the nervous system in some form and part may be regarded as a factor in every case of gout. There are reasons enough for thinking that changes in nervous centres determine the locality of each gouty process, while changes in the relations of the blood and tissues determine its method and effects; and that thus we may explain the symmetries of disease in gout, sometimes bilateral, sometimes antero-posterior, and thus its metastases. But these changes are a part of the pathology of gout which is not yet clinical; patients do not feel them or tell of them; the nerve-conditions, which they feel and which we have to study for them, are the neuralgiæ and various morbid sensations which few escape. These, in their variety and frequency, may be very characteristic of gout in its least typical forms. It may be impossible to find any sign by which a gouty sensation may be distinguished from another, yet by their varieties and their associations they may often be known and remedied and made useful for diagnosis.

Gout affects the sensory much more than the motor elements of the nervous system; pain is much more frequent than convulsion or even cramp. And the pain may be most intense, as in an ordinary sharp attack of gouty inflammation. Few pains, I suppose, can surpass the sharp aching, the bursting tightness, and hot throbbing, the tenderness to touch, increasing to an agony on movement or on strain of the inflamed part; and the pain is altogether disproportionate to the other signs of inflammation, and, even more, to the consequent structural changes in the inflamed part. These may be trivial, or too slight to be observed after even the intensest gout; so that when you hear of a fiercely inflamed joint, hot and swollen, and see it a few weeks afterwards looking quite healthy, you may be nearly certain that gout was there.

This painfulness is consistent with the frequency and severity of many morbid sensations in gout, and with their occurrence from what may be regarded as very slight and transient causes.

A large proportion of gouty persons are subject to neuralgiæ, sciatic, brachial, lumbar and others. It may not be possible to tell by any characters of its own a gouty neuralgia from any other; but often it may be known by being more sudden than others, more fitful, more quickly affected by errors of diet, indigestions, and other casual disturbances. And in certain parts neuralgia is much more often due to gout than to anything else; as in the heel, external ear, tongue, palate, fingers, and breast.

There are other morbid sensations even more suggestive of gout than are the neuralgiæ. Such are, especially, burnings, numbnesses, and tinglings. The burnings are felt on various parts, especially on the thighs and palms and soles. Patches of skin are described as feeling intensely hot or scalding; yet they look healthy, or only slightly flushed, and no change of structure ensues, no blistering or desquamation, even though the burning may last long or be often repeated. Few things, I believe, are more indicative of gout than these are.

Numbness of a limb, or of part of one, is as common. Sometimes it is a feeling as if the part were 'asleep' after pressure on its chief nerve trunk; some people wake with an arm thus 'asleep,' even though they have not lain on it. Sometimes it is associated with tingling, or the sensation described as of 'pins and needles.' These tinglings are especially common in toes; in two or three at a time, and may continue, as may the other sensations, for parts of many days, or evenings, through some weeks. In some persons, too (but in many besides the gouty), the fingers or toes often 'die,' becoming white as with a kind of local syncope, and then flushing red and hot. Except for diagnosis, these may be trivial things; but they often cause great distress to nervous persons who fear that they are forerunners of paralysis or some other serious trouble. Paralysis is, indeed, not rarely preceded by some such sensations, and you should be careful in diagnosis with anyone complaining of them; for this is just one of the instances in which a tendency to 'set down everything to gout' may lead to mischief. The best guidance I can give is that you may believe these sensations to be due to gout and not to changes preceding paralysis, if they have been felt for long periods, or in frequent fits of short duration, or in only certain times of day, or by persons whose general nutrition is good and who are free from other signs of defective nervous or motor power. And what I have said of hese I might repeat concerning sensations of giddiness, rhich are very frequent and very harmless in the outy.

The frequency and variety of morbid sensations due gout are an almost constant source of distress to perons who are not only gouty, but hypochondriacal or ysterical. I do not suppose that there is any natural onnection between these states; but when they chance concur, they greatly aggravate each other. The pains nd other morbid sensations are real and objective; but hey are increased by the patient's faults both of observaion and of judgment; of observation, because they are tudied with a morbidly close attention, of judgment, beause they are ascribed to wrong and frightful causes. he normal mind distributes its attentions to the body in ertain measures and proportions, for which there is a neral, however vague, rule among men; the abnormal ects it in undue proportion to one or more things; and among these be a pain, it becomes more intense, being re clearly perceived. As we do not see without a ction of the mind, so neither do we feel pain; and ight becomes keener by exercise and fixed attention, oes pain. Thus the hypochondriac, discerning pains enly as a microscopist discerns the minutest visible ts, perceives many pains which by others might be ; and has intense suffering from conditions which nmon minds might only be sources of discomfort; goutiness has never one day of freedom from pain e other distress of sensation. It is not that he s his sufferings, or invents them; he discovers nd by watching and strong attention perceives them more clearly than do men of healthier mind; and then, as he thinks of them, he builds castles of despair.

The minor gouty affections of muscles, if we except the painful ones in which their sensitive nerves are more concerned than their motor, are, I think, few.

Cramps are frequent; especially cramps of the legs and feet at night; sometimes very severe, making people, as they say, jump out of their beds. They may always suggest gout: but they are frequent when the urine has excess of lithic acid, whether this be associated with gout or not. And such cramps may occur, I do not doubt, when there is neither gout nor morbid urine.

Equally suggestive—not more than suggestive—are 'catchings' of muscles, sudden feelings of stiffness and pain, occurring on attempts at too great force or too great extent of action, or in too long exercise, such as that of stooping. Gouty persons often feel such cricks or catchings coming on, sometimes in the neck, sometimes in the loin; and they learn to manage them cleverly, moving the head or back slowly and steadily till the muscle, which seemed on the point of becoming painful or stiff, is at rest. Sometimes at the end of the movment, a snap is heard and then, usually, all is safe. But if the muscle does catch, then may ensue a stiff neck, or a lumbago, or some similar trouble lasting many days.

The last set of minor gouty affections occurring in surgery of which I will speak shall be those of the skin: of those of the eyes and ears I have had too little experience to justify my speaking.

It is in accordance with what I have said of the susceptibility of the skin in gouty persons to the influence of arnica and other irritants that we find it very frequently the seat of outbreaks of gouty inflammation. The inflammation may appear in any one of many methods named in dermatology, and hence we may speak of gouty eczema, gouty psoriasis, urticaria, prurigo and so on. The diagnosis cannot always, perhaps cannot ever with certainty, be made by observing only the local characters of the disease: a gouty eruption may appear the same as one in which gout may have no share. But in other conditions we may find nearly certainty; and it is important to find it, for a very large part of the treatment of skin-diseases must be determined by the constitutions of those in whom they occur. The study of the whole enormous classification of skin-diseases, with its extravagant waste of Greek, will give very little help to the cure of any of them unless it be combined with the study of each person's general health. Is the patient scrofulous, or gouty, chlorotic, neurotic, or what?

Now, you may suspect gout in a large proportion of those who, at or after middle age, have any chronic skin-disease; and the suspicion may be strengthened, as with cumulative evidence, by one or more of these things:

If the eruption have been sudden, without any apparent cause or (except in cases of urticaria) after some known error of diet; or while gout is evident elsewhere:

If gout, either in some typical form or in many minor signs, has been observed either in the patient or in many members of his family:

If there have been any appearance of metastasis as from a bladder with cystitis or from bronchitic lungs:

If the eruption be clearly made worse by even moderate quantities of wine or beer, of salt or sugar.

Of this influence of foods, however, I must say that many of those which are worst for gout are bad for nearly all diseases of the skin. I used to have a short rule for advice to the out-patients who had skin-disease, that they should take very little of anything that was either strong, salt, sour or sweet. The alliteration, sounding, as usual like either wit or wisdom, helped them to remember very good rule which you too may find useful. It shut out none of the most useful or most comfortable foods; only gives warning to be very moderate, if not abstine with fermented drinks, with salted meats, with stro acids, with sugar; and it is as certain as anything c the kind, that all these are injurious to those who have eczema, psoriasis, herpes, prurigo, or any such disease of the skin.

Of all the gouty diseases of the skin, eczema is *the* most frequent, and it has often seemed to me to justify a belief that sometimes a disease is what is called a safety-valve; for many patients are sure that when some patch of eczema fades or is very dry, they feel unwell or have some graver discomfort. I would not always repress such eczema if I could; I would sometimes advise agreement with him who thought himself unhappy if he had nothing to scratch. But it is sometimes a great aggravation. Especially it is so when associated with varicose veins; I say associated, for I do not suppose that either of them in any sense produces the other. Eczema thins the skin and weakens it over the veins; and they dilate and grow the more quickly; and then, if the skin ulcerates, there comes one of the greatest troubles of the poor, the varicose ulcer of the leg, that is, an eczematous ulcer with the complication of adjacent varicose veins.

And let me mention another fact concerning the gouty eczematous ulcer; its intense painfulness at night in bed. Some have assured me that their ulcers of this kind always became painful when they lay down with the leg level or raised; some that the warmth of the bed was intolerable. I cannot explain the fact, any more than I can the night-pains of periostitis; but you will be able to observe it, and I think that you may count it among the evidences of gout.

Of course the ulcers I have just spoken of are not to be confounded with the evidently gouty ulcers which form over chalk-stones and discharge chalky matter. These are typical of gout, and are described in all the works that treat of the whole pathology of the disease. I may therefore omit them.

I wish I could end with some very useful general rules for the treatment of all these various lesser forms of gout; but it is difficult to state rules both large and true on any subject such as this. For gout may be mingled with scrofula or syphilis, with diabetes, albuminuria, or dyspepsia; and it must not be treated without regard to these. Moreover, in every patient there is an individual personal character which cannot be brought within a general rule, and yet must be considered in the treatment. Is he rich or poor; indolent or busy; vigorous or infirm; middle-aged or very old? To any of these and to many things besides, your treatment must be adjusted.

General statements, therefore, must be very cautiously made; and let me say that you will find in gout, very clearly, that when you are examined, registered, and brass-plated, then must begin the acquirement of some of your most useful knowledge. In your school-work you must study diseases chiefly in what are regarded as their types. The study is essential, but it must not be thought nearly sufficient; and the short text-books in which it is contained are not safe in practice unless they are interleaved and interlined with accounts of multiform deviations from the types of diseases, and the corresponding deviations from the usually good modes of treatment.

I beg you to pardon this digression if only that I may justify myself for giving scarcely more minutes to the treatment of these minor forms of gout than I have given hours to the description of them.

As they fall short of typical gout so must your treatment of them be less. You will very rarely find occasion for full doses of colchicum, veratria, or other medicines of that class. Small doses of colchicum with quinine, [illegible] blue pill, or alkali often seem very useful; patients feel sure that they are better after them; but colchicum has its full value, and has gained its great repute, in full doses in acute cases, especially in those in which the joints are affected and the patients robust.

I think it must be a true general rule, for all the cases I have described, that patients should excrete freely and, if need be, should be made to do so: that their bowels should act not only regularly, but with just quantity; their urine should be copious and free from lithate deposits; and their skins not dry and harsh or greasy. The ways to secure all these things are many. Not a few secure them by diet and water-drinking. By taking less meat than is usual, and but little of stimulants, and drinking half a pint of water or milk while dressing in the morning and undressing at night, many very gouty persons keep themselves in health and full working order. But many need more than this. The most generally useful thing is an alkaline drink, such as potash water, or lithia water, or some of the mineral waters of Vichy or Vals, or 15 or 20 grains of citrate of potash every morning with the usual tumblerful of water. Out of the multitude of alkaline drinks you must choose the best you can for each case, and it should be such as will ensure that the urine, which may have had excess of lithates, shall be habitually clear and free from deposit. But you will find some who will feel that alkalis 'lower' them, or in some other way disagree with them. For these it is a good plan to give the alkaline water on only four or five days in each week, and, on the other days the plain water or milk; or the alkali may be given with quinine or iron.

Many habitually and yet not typically gouty persons need or wish for an almost habitual use of aperients. I have no doubt that many of them could do without medicine if they would live more moderately, and eat and drink less than they do; but if they will not, or if even moderation be not sufficient, the comfort and benefit of aperients may be indisputable. Many of the most popular practitioners have been those who have most frequently prescribed purgatives. Blue pills and black draughts; five or ten grains of calomel; various ways of giving Epsom salts; these and other such habitual prescriptions have done much real or apparent good; and though they are now less used they have only given room to other aperients deemed less likely to do harm, the various aperient waters, the use of which is now even more general than ever was that of the medicines they have replaced. General rules seem impossible for guidance of choice among all these things. You will find the use of calomel much greater than you think, even in the old and thin who are not very unsound. There are some who seem to get on best with a daily pill containing a small quantity of aloes with quinine and ipecacuan or nux vomica; and more who prefer a drink of some purging water once or twice a week, in which case you should advise it in place of the morning water-drinking. Anyhow, the gouty should be made to excrete freely from their bowels and to discharge the excretions without long delay.

And so from their skins: there are none who gain more real good from active exercise in fresh air, in which they may perspire freely, none who are more benefited by daily washing. The water need not be cold; and for the old and the neuralgic it should be tepid or warm and used in a warm room. So it should be for those who are rheumatic or have lumbago or general feebleness of circulation with habitually cold feet; and all should use soap and rough towels, for skins secrete grease and cannot be cleared of it with water alone. I speak only of washing; that of the tub; not of the whole bath, or of the regular use of baths. Let me only say of these that we might do much more good than we do in England, with our sea-water, or even with plain water, if only we gave more careful directions for their use. I do not doubt the special utility of some of the mineral waters of the Continent when they are prescribed by competent persons for the cases to which they are severally suited; but the value of even the best of them is enhanced by the exact regulation of the light food before the bath, the temperature, its uniform maintenance, the length of immersion, the water-drinking after it, the hour's complete rest in bed, and the quiet morning after it. Most of us neglect all these things, and then doubt whether courses of baths can be of any use to gouty persons.

For any general rule of diet, I fear that none more definite can be given than the rule of moderation; but then every patient will ask, What is moderation? Well; he must not eat as much as he can, or as much as he likes, but only as much as he has good reason to believe that he can easily digest. He may eat, in this moderation, nearly all ordinary foods, avoiding such as he has found himself unable to digest with comfort, and being very cautious of all large quantities of meat, and of all things hard, dry, tough, very salt, very sweet. In drink the rule of moderation must be yet more rigid; but as to what a gouty man may drink, each must find for himself or be taught. I do not doubt that the light wines are more wholesome than the strong; and that beer must not be drunk unless in mid-day and during active open-air life; and I think it likely that very diluted good spirit is better than wine of the same strength; but all these things must be studied and settled for each patient who has not enough power of observing and of self-control for his own guidance.

I feel as if these lectures might do more harm than good if I did not end with at least two cautions.

Do not think that I have tried to teach the whole pathology of gout. Rather than this, I have spoken almost exclusively of facts which are not generally included in the study of its pathology. Its whole pathology you must learn in systematic books, or lectures, or in some of the treatises expressly devoted to it, of which the best known to me is Dr. Garrod's.

And, when you come to practice, and see the large number of cases in which gout is at least one element of disease, you may be ready to ascribe everything to gout. In this temper of mind study scrofula or syphilis or any other prevalent constitutional disease with as much care as you study gout; you may thus find how little wisdom there is in the study of one speciality.

ON SOME OF THE SEQUELS OF TYPHOID FEVER.

conscious of the danger which one who practises ery usually incurs in writing on subjects that are rally in the field of practical medicine. But among iseases that are likely to follow typhoid fever there some which occur in so advanced a period of the alescence, and appear so local and so far dissociated the fever, that they may be observed more often by eons than by physicians. I venture, therefore, to attention to the frequent occurrence after typhoid of these following diseases, namely, phlebitis, stitis with or without necrosis, especially periostitis es, local paralysis of muscles.

f the frequency of these diseases after typhoid fever have no doubt. I believe that I have seen, taking ogether, more than a hundred cases in the last e years. I do not feel competent to deal with the ion whether each fever has, as seems very probable, wn proper sequels, and is in this sense, though ps in less degree, as specific as in its fever-period; excepting the phlebitis, I have not seen any of iseases I have enumerated after any other than typhoid fever, or a fever which I suppose to be closely related to it; and I have not seen after typhoid any corresponding number of cases of large lymph-glands, diseased joints or ears, or other diseases of mere debility such as may follow any acute illness, and, notably, scarlet-fever.

The fever which I have referred to as 'closely related' to typhoid, is that which in the last few years has been prevalent in Naples, Rome, and I believe other places in middle and southern Italy. Some call it typhoid; some remittent; Neapolitans often call it Roman, Romans Neapolitan; in some cases I have ample reason to believe that it was genuine typhoid; and the likeness of its frequent sequels makes me ready to believe that it always was so.

It is common to all these sequels of typhoid fever that they appear when the patient is considered to be 'well of his fever,' when his temperature is normal and, I believe, constant; when he is beginning to move about and becoming stouter and stronger. I do not remember to have seen or heard of a case in which any of them occurred during the continuity of the fever.

The *phlebitis* has in it no character widely different from those in which it is seen in other of its so-called adhesive forms. Its most usual seat, by very far, is in the femoral, especially the left femoral, vein. It is generally marked by aching and tenderness along the line of the inflamed part of the vein, with stiffness at the groin, and more or less of firm general swelling of the limb. There is no marked access of fever, no other disturbance of the general health than may be ascribed o the local distress. The duration of the painful sympoms is, I think, quite uncertain; but after they have eased some bigness and clumsiness of the limb usually emain for many months. In many cases the limb emains always larger than the other, but not weaker or ess muscular; and in some, in which, I suppose, the emoral vein is in more than the usual length obstructed, he superficial veins become very large and tortuous.

I have not seen or heard of a case in which suppuraion attended the phlebitis; I have only heard of one in which embolism occurred; and I do not know of any n which the affected veins were examined after death. I believe that the condition is one of inflammatory swelling and thickening of the walls of the vein and consequent narrowing of its canal. Very probably, also, there is lymph-exudation or deposit in layers from the blood. I doubt whether thrombosis is ever a primary event, though it may occur as a consequence of the inflammatory changes in the lining of the vein.

The *periostitis* following typhoid fever has its most frequent seat on the tibiæ, but I have seen it on the femur, the ulna, the parietal bone. In one case it was symmetrical on the lower parts of the shafts of the tibiæ; in another it occurred on both tibiæ and one femur; but, with these exceptions, I have not seen it on more than one bone in the same person. It has always been circumscribed within a space of from one to three inches in extent, has always occurred in the convalescence, has never been attended with the delirium, fever, or other severe symptoms attendant on acute necrosis. At first it is only marked by the limited, hot and very tender swelling of the periosteum, and I have seen cases in which the periostitis has remained very long in this condition, and then slowly subsided without necrosis or any other abiding change of structure. In two cases, at least, the patient has remained for months—in one case for three years—subject to repeated attacks of pain and swelling of the periosteum, yet without signs of suppuration or more change than a slight permanent thickening. In one case a recurrence of periostitis ensued after nine years of apparent soundness. In two cases the suppuration was not between the periosteum and bone, but in the substance of the periosteum, and in both these it has continued for many months with serious impairment of health.

When the periostitis has been associated with necrosis, the extent of the dead bone has always been far less than that of the inflammation over it, and, with rare exceptions, only the hard compact structure of wall, or the outer table, has perished. The separation of the dead bone has taken place in the usual way, and has been followed by healing which, so far as I have seen, has been permanent.[1]

The *periostitis of the ribs* is in so much unlike the kind just described, that I have never yet seen it associated with necrosis. It so nearly resembles the ordinary scrofulous periostitis of ribs, that I have sometimes thought it should be regarded as only an evidence of scrofula educed by the feebleness of nutrition consequent on the fever. Yet I have never seen it associated vith other similar signs of scrofula, and it has occurred, fter typhoid, in some of so robust and apparently unlemished constitution that it would seem absurd to mpute scrofula to them.

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[1] Cases narrated by Dr. Poignard make me believe that the laryngeal cartilages are apt to suffer necrosis in the convalescence of typhoid. See *Medical Times and Gazette*, November 30, 1878, p. 644: from the *Recueil de Méd. Militaire*, August.

In the usual course of this disease, beginning always, believe, in the convalescence, a well-defined round or val swelling is found on one or more ribs. Whether on one or cartilage, the swelling is generally on the front f the chest. It is painful and tender, and suppuraion slowly ensues in it. Then slowly it discharges tself through one or more channels leading obliquely through the overlying structures and through small openings in the skin. The flow of pus, thin and pale, continues usually for many months; I have known it continue for even two years; and not rarely fresh openings are formed for branches from the first channel of discharge. In the end complete healing takes place, with deep depressed scars and complete clearing-up of ll the periosteal swelling.

I have never known necrosis of a rib in these cases, or ever seen or heard of any advantage from laying ide open any of the sinuses. The general health never ppears to be seriously affected by the abscesses, unless in persons of naturally feeble health. Commonly, indeed, the patients feel quite well, and can be active, suffering nothing more than slight local inconvenience.

All the cases of this sequel of typhoid fever that I have seen have been singularly alike, varying only in the position of the abscess. In one, in which I believe that the disease began in the periosteum of the eleventh or twelfth rib, a great abscess slowly made its way between the abdominal muscles, and I had to open it at the groin. In that case alone have I seen life endangered; but it ended well.

Local paralysis of muscles in the convalescence of typhoid I have seen in only a few cases, and in these the muscles affected were those supplied by the peroneal or the anterior tibial nerve. I have seen intense neuralgia with spasm imitating, in one case, disease of the hip-joint, in another disease of the spine; and twice I have seen paraplegia. I am assured, also, of one instance of five members of a family having more or less extended paralysis after typhoid or typhus fever. But far better knowledge than I can supply of the paralysis following typhoid may be found in a paper by Dr. Nothnagel.[1] He has seen or found on record cases not only of local motor paralysis, but of hemiplegia, paraplegia, some muscular tremors, and spasms, anæsthesia, hyperæsthesia, and neuralgia.

I may refer to his paper for its value in regard not only to these sequels of typhoid fever but to the general pathology of convalescence. I remember that the late Dr. Baly used to say that a book on the diseases of convalescence might be one of the most valuable that any physician could write. Perhaps I may hope that to such an one I have now contributed; but a far larger and more important contribution has been made by Dr. Keen of Philadelphia in a lecture 'On the Surgical Complications and Sequels of the Continued Fevers,' and in the copious bibliography appended to it.[2]

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[1] Die nervösen Nachkrankheiten des Abdominaltyphus, in the *Deutsches Archiv für Klinische Medicin*. Bd. ix. p. 480. 1872.

[2] Published at Washington, 1877.

NOTES FOR THE STUDY

OF SOME

CONSTITUTIONAL DISEASES.

I OFTEN wished to give some clinical lectures on constitutional diseases, especially on those which are inherited, and through inheritance subject to many and wide variations from what are regarded as their typical forms. These notes are the collected fragments and failures of many attempts so to express what I believe on parts of the subject that it might be possible for students to listen to me for an hour at a time. I convinced myself of my inability to teach the subject orally; and I am doubtful whether, even after many revisions, I have written anything worth reading.

The study is beset with much greater difficulties than, at first thought, appear. The sufficient materials for it exist only among patients whose health can be observed through many years, and whose family-histories can be learned, not only from hearsay, but from the study of many members in different branches and generations of the same family. Of such patients, a sufficient number and variety can be found only in some large general practice among the richer classes of society; but the few who obtain such a practice soon find, or imagine, that its duties are too laborious to allow time for any careful record of the facts they learn. In the incomplete study of the subject in surgical practice one can gain only very incomplete knowledge; but since what I have gained may not be all inaccurate, or all useless, I venture to publish some of what I believe to be true.

The knowledge of the chief inherited constitutional diseases, as of gout, tuberculosis, scrofula, in what are regarded as their typical and complete forms, is nearly as good as any yet attained in pathology. But it is far different with the study of these and other less marked constitutional diseases in the more numerous instances in which they exist in less complete forms, or are mingled and confused with one another, or with the effects of injuries and accidental diseases. In reference to all these the facts are, for the most part, so vague and undefined, so confused and apparently inconstant, that it has often seemed to me useless to pursue them. But, more often, I have felt sure that there is great value in the study of even the least signs of constitutional disease; and that, although we may never attain to a scientific precision or completeness of knowledge in the matter, we may, with care, gain a large quantity of information which may help to right diagnosis and right treatment of diseases.

If this seems doubtful, consider the success with which a somewhat similar study is pursued.

Each man's constitution is to be studied in the whole character of his health, both bad and good; in the same sense as that in which character is studied in relation to any one's mental or moral condition. And we may observe a parallel between the study of constitutions in men's health-characters, and that of their minds in mental or social characters. Each man's mental character is derived by inheritance, through we know not how many generations, or with what variations and confusions; and in each man this natural character is susceptible of modification, not only by education and all the circumstances of life, but by that which may be the strongest of its components, self-will.

I suppose that, if we could count the elements of which minds are constituted, they would be at least as numerous as those that make up the constitutions of our bodies. The minds derived from their combinations are so numerous and so various that they do not admit of any precision of classes or names. Yet, a practical knowledge of them may be gained with singular exactness. There are men who are, as it is said, excellent judges of character. With observation of demeanour, of expression and of occasional conduct, and perhaps some study of each man's history in life, or of his descent and family relations, they can ascertain the most important features of the mental character of nearly everyone who comes before them. They can hardly tell how they do it; they cannot make a science of their knowledge; and yet for practical life they commonly surpass those who can write excellent essays on the human mind. They learn the general character, or the most prominent and influential part, of each man's mind; what chiefly guides his conduct; what in him may be most easily acted on; and with this knowledge they make their diagnosis and guide their practice.

Similarly, and with more care and labour, have we to study constitutions in the personal health-characters of all our patients; not only of those whose unhealthy constitutions are signalised in some typical form of disease, but of those who to the unobservant may seem nearly well, or indefinitely ill, or, at the most, only locally unsound. And I am sure of this: that as the justly successful members of our profession grow older and, probably, wiser, they more and more guide themselves by the study of their patients' constitutions, learning more of family-histories, and detecting constitutional diseases more skilfully in signs which, to others, seem trivial.

MEANINGS OF NAMES.

I say meanings rather than definitions, for when knowledge is very incomplete we cannot exactly define all the words that we may use.

By constitutional diseases are generally meant morbid conditions which affect the whole method of life and indicate themselves by distinctive local morbid processes.

The inherited constitutional diseases, of which almost alone I propose to speak, are those in which morbid conditions affecting the whole method of life in parents are reproduced in their offspring. In some persons the morbid conditions are evident throughout life in characteristic forms, complexions, peculiar relations to food or to injuries, or in other signs, such as are seen in well-marked instances of scrofulous, tuberculous or rachitic persons. In others, there may be the appearances of complete health till the morbid constitutional condition indicates itself in one or more local diseases, in which it is then said to be manifested or localised.

The condition preceding this local manifestation of constitutional disease is commonly called a constitutional tendency or disposition to disease. Diathesis and dyscrasia mean nearly the same; and temperament has, I think, part of the same meaning; but this word is commonly used with epithets so strange that I think it best to avoid it altogether.

By constitutional disturbance or disorder is generally understood a general and pervading disorder of the whole health excited by some local morbid process, such as that in an irritated or inflamed wound.

I shall keep to the words with these meanings without professing more than that they are convenient.

CONSTITUTIONAL TENDENCIES OR DISPOSITIONS TO DISEASE.

These are not to be thought of as unreal or accidental things. Rather they are progressive changings, growings-up towards complete and evident disease. Sometimes the progressive changings are not discernible; sometimes they are declared by some of the lesser diseases significant of morbid constitutions. And it is this method of progressive changing which is transmitted from parent to offspring; for a parent may transmit to children a tendency to gout, or phthisis, or any other heritable constitutional disease, long before his or her self has shown any clear signs of it. A parent may 'die and make no sign,' long after transmitting to offspring such tendencies, such methods of progressive organic change, as in them, or some of them, will surely lead to the development of a disease which the parent did not display.

It is well to be sure of the reality of the progressive changes by which what we call a constitutional disposition or tendency becomes what we call a constitutional disease, and that the two names, like 'boy' and 'man,' mean the same thing in different stages. For the method of life in each constitutional disposition must be, at any period, characteristic, though its distinctive characters may be beyond our present powers of discernment. In any two children, for example, or in any two embryos, one a product of healthy parents, the other of tuberculous parents, however like they may appear, there must be even now dissimilarity. In the same measure as they are now becoming constantly more unlike each other, in becoming severally more like their parents, in personal appearance and mental character, so are they becoming constantly more unlike each other in their dispositions or tendencies towards health or disease. The future difference is not more certain than the present, though it will be more evident. The future is potentially in the present state; in some material quality not the less sure because not yet sensible. I say 'not yet,' in the full expectation that minuter study will attain the knowledge of many things characteristic of constitutional dispositions which we at present overlook or cannot see.

Moreover, it seems right to hold that the differences among persons of different constitutions pervade every part and process of their several lives. As matter of fact, it cannot be shown that, in every instance of a constitutional disease, even in its complete form, and when it affects many parts at once, the whole method of life does deviate, in some distinctive manner, from what may be regarded as the method of an ideal perfect health. But this is very probable; and in theory it is well to hold that in each constitution all things are consistent and, therefore, all characteristic. Certainly, it seems at least very probable that, for example, in a gouty person nothing is and nothing works exactly as in a scrofulous person, or as in a completely healthy one; and that the differences, which we may hope that some of our successors will discern, are as characteristic during the time of constitutional disposition as during the complete disease.

Similarly, in the cases of constitutions which take their names from the dominant error of one constituent of the body, as in the nervous or neurotic, and in the cold-blooded (so-called), it seems most probable that all the other constituents are consistent with this, and, if we could discern them, would be found different from those in other constitutional diseases.

It seems to me better thus to hold a large, even a vague, theory of the differences of constitutional conditions, than to narrow our thoughts about them by holding that, in any case, all which is constitutional is in the blood, or the nervous system, or any other structure which, in substance or in influence, pervades a man. Doubtless, the blood and the nervous system, the connective tissue and the lymphatics, pervading as these do nearly every part, have very large shares in a constitution, and defects and diseases in them would so quickly and so greatly influence the whole, that a disease if it could be in any one of them alone might, without serious error, be spoken of as constitutional. Still, it is not right to regard any one of these, or all of them together, as the sole factors of a constitution: for, in some cases, as much might be said of a single organ. When some disturbance of the action of the liver or the kidney gives a distinctive character to every process in the economy, either of these organs might be thought to determine the whole constitution. But though the influence of the blood or of the liver may be everywhere, yet neither blood, nor liver, nor anything else is everything: a constituent is not a constitution. A constitution should not be thought of as less than the sum of all those intrinsic things from which a whole health-character is derived.

VARIATION OF CONSTITUTIONAL DISEASES IN HEREDITARY TRANSMISSION.

It seems probable that in embryo-life there is, generally, a tendency to recovery from the morbid conditions transmitted from parents: a tendency to revert to the true healthy type of structure and composition. Such a tendency would be in accordance with the general rule of tendency to reversion from all variations of specific characters: and would be part of that tendency to recovery of health which suggested a *vis medicatrix naturæ*, and which we may observe throughout life, diminishing as age increases, yet never quite lost. If such a tendency to recovery did not exist in great force in the embryo, we should have to expect a far more rapid destruction than we see of families and races by such diseases as cancer, tuberculosis, and scrofula. Believing in its existence we might expect what, on the whole, we generally see; namely, that in transmission an inheritable disease loses in force, many children escaping altogether, and many displaying the disease in its less severe and less typical forms. The tendency to recovery is, we may believe, the greater when one of the parents of the embryo is healthy, so that the constitutional disease of the other may be, in a manner, diluted. Through such dilutions and such tendencies towards recovery of health in embryo-life, and in a less degree after birth, we may believe that many of the lesser constitutional diseases are derived; but of the rate of diminution in transmission, and of the possible changes of form associated with changes of intensity or quantity of disease, we know very little, if anything. And very little we know of the results of the transmission of more than one constitutional disease to the same offspring. We can often see plainly that the forms in which different persons display a constitutional disease appear very different from those seen in their parents. Thus, in a family of which one or both parents had typical gout or tuberculosis or scrofula, there may appear any number of the lesser forms of those diseases, or of the forms deviating furthest from the type. And yet a certain general similarity may appear in all the local manifestations of each constitutional disease thus variously transmitted. They may be unlike in structural appearance while affecting different structures; and yet they may be like in their time-work, or in the production of some characteristic morbid product, or in the influence which medicines or diets exercise on them. These things may prove the same constitutional origin in apparently very different local diseases.

It may be observed, for a safe rule in pathology, that, when any heritable disease appears in different organs or textures in different members of the same family, it is most probably constitutional. The rule is illustrated in most gouty, scrofulous, and syphilitic families, and is available in evidence of the constitutional nature of cancer; for cancer, when it happens in many members of a family, is not tied, as each other morbid growth is, to one part or texture,[1] but may be found in some different part in each of those in whom it appears.

EVOLUTION OF DISEASES.

The study of the variation of constitutional diseases in hereditary transmission may lead to knowledge on a subject of singular interest,—the evolution of diseases. We are ready to speak as if we believed that the heritable diseases in our pathology were always such as they are now. But there is no sufficient historic evidence for this belief, and the general rule of variation of forms in hereditary transmission makes it improbable. I think, indeed, that historic evidence would support the belief that in some instances, even within the life of history,[2] diseases have been greatly modified in hereditary transmission;[3] that some which were once prevalent and well-marked can now scarcely be recognised, while others, if they existed at all in times far off, existed in some form very unlike what we now see. But, even if I had skill for reading history, I should suspect that no ancient records would be sufficiently minute to justify our founding on them any useful pathological belief. I think that the best chance of finding truth concerning the evolution of diseases is in endeavouring to discern the relations between the varieties of form in which the same or allied diseases appear in different members of a family, either in the same or in successive generations.

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[1] *Lectures on Surgical Pathology*, 3rd edit. pp. 794-5. *Trans. of the Pathological Society*, vol. xxv. p. 310.

[2] 'History was born on that night when Moses led the children of Israel out of the land of Goshen.'—*Bunsen's 'God in History.'*

[3] For instance, I should have believed that leprosy, which was once common in England, is now fading-out in the various forms of keloid, scleriasis, and other allied skin-diseases, if it were not that Dr. Fagge, who has studied the subject with an admirable care, is against this belief.—*Guy's Hospital Reports*, 1868, p. 325.

The chance of finding exact truth is, we may admit, very small; the smaller because, in any group of cases that we may study, there will, probably, be some in which disease is become greater, deviating further and further from the type of health, and some in which it is becoming less through the constant tendency to recovery of health and reversion to the type. If this be so, we must expect to find in the same family examples of both the evolution and the involution of disease: the one a series of forms receding from the type of health, the other a series of forms returning to the type, and the two, if not quite alike, yet very hard to distinguish from each other. Still, since we may be sure that there is truth somewhere, we should seek it with all our might.[1]

The fact (as I think) that, in members of cancerous families, not only recurrent tumours and rodent ulcers are much more frequent than in other families, but fatty tumours and harmless warts and nodular growths of skin, may be explained on a theory of evolution of disease.

Similarly, we may explain the frequency of the whole group of lithic acid diseases in the families of the gouty. We may fairly doubt whether any external condition or any mode of life could produce complete gout in one having no hereditary disposition to it. But we may fairl believe that excesses of nitrogenous food, with be or other fermented drinks, continued through sever generations, will accumulate the conditions of the lit acid diathesis till they culminate in complete gout. A we may believe that different members of any family in which this process is going on, or has been achieved, will present as many different examples of the lithic acid group of diseases.

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[1] The wonderful facts discovered by Brown-Séquard, and briefly related in his paper *On the Hereditary Transmission of Effects of certain Injuries to the Nervous System*, in the *Lancet*, January 2, 1875, are enough to encourage inquiries in all directions, even in those which seem least likely to lead to truth. Who would have thought it possible that the division of a guinea-pig's sciatic nerve could lead to the production of offspring toeless, with outstanding eyes, epileptic?

Further, I will hazard a guess, if only for illustration of the study of evolution of disease which I want to recommend, that the evolution of cancer in many generations may be studied in the whole group of hereditary morbid growths. We may begin with cases of monstrosities by excess, such as those of supernumerary ill-formed fingers, among which are some that recur once or more after removal. These are hereditary, and no hard line of distinction can be drawn between them and the often hereditary fatty, glandular, and cartilaginous or osseous overgrowths, which deviate from the body's type in shape, yet are not defined in outline, as are tumours, and are not unlimited in growth. These, again, cannot be separated by more than arbitrary verbal definitions from the tumours composed of similar structures which are, indeed, separate and circumscribed growing overgrowths, but are very rarely found imbedded in structures unlike their own, and very rarely recur after excision, and very rarely multiply themselves by growing into blood-vessels or lymphatics. The gradual differences among these hereditary growths are not more than are common among the well-known variations of specific forms in domesticated animals and plants.[1] And it is no abrupt step from these and the like tumours, the 'innocent tumours' of clinical surgery, to the recurrent tumours or sarcomata which are composed of the same structures in embryonic forms (spindle-cells, round cells, and the rest), which recur after removal, and not very rarely grow into, or detach cells into, the blood-vessels or the lymphatics, and thus, in a measure, and in their later stages, infect the blood and are generalised. From such a disease as this we may imagine that further variations in many hereditary transmissions would bring out cancer, apt to grow in any parts, with structures even more elemental than the embryo-structures of the recurrent tumours, always recurring after excision, always infecting lymph and lymphatics and through them, or more directly, always infecting the blood.

But if the evolution of cancer may be guessed at in a series of diseases such as this, then we may expect that, among the recurrent and other tumours that we see in families in which cancer also occurs, some are instances of its involution, instances of forms of morbid growths in process of gradual reversion to the healthy types of shape and structure.

I hazard another guess—that syphilis, of the existence of which there are some vague hints in records soon after the 'birth of history,' may have begun anywhere or in many places in multiplied and mingled uncleanlinesses, and that its forms may have changed through changes in the susceptibilities of those descended from infected ancestors, till we can hardly recognise in what we see the likeness of what was long ago described. And although I am not nearly ready to believe, as some do, that all scrofula is derived from syphilis (I could as soon believe that all rheumatism is so derived), yet I cannot doubt that some of the diseases commonly grouped with scrofula are forms of syphilis varied by inheritance, and that these diseases are again variable in either direction towards greater disease or towards health.

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[1] It seems hardly necessary to say that my suggestions respecting the evolution of diseases have come through a study of Darwin's works.

These are mere guesses; but they are good enough for illustration of a belief in the evolution of heritable constitutional diseases; a belief which will not be proved to be absurd by any proof of the absurdity of my illustrations. Whatever may have been the beginning of each of these diseases, whether in some changes produced by external conditions, or in some falsely called casual malformation, it is most probable that the forms in which they now appear have been attained through a long series of changes. Processes of gradual evolution through similar forms may be even now going on, and processes of involution or gradual return to health; but I do not believe that, through any external conditions whatever, and independent of inheritance, anyone can become the subject of cancer, gout, tuberculosis, or any of the diseases allied to them. External conditions may hasten the appearance of such diseases, determine their seat, and variously modify them in the person affected, but seem to me utterly inadequate to originate them.

EVIDENCE OF INHERITANCE.

When anyone says that no instance of this or that disease has ever occurred in his family, the statement is scarcely worth recording, even though it be made with much more than usual consideration. Very few persons have a clear knowledge of the healths of their four grandparents, and I never found one who knew anything useful about the healths of his six or eight great grandparents; to say nothing of the ancestors of the previous generation. Yet, from any of these, or from others still more remote, any disease, or any considerable feature of a constitution, may be derived. Thus derived a disease may appear, as true leprosy sometimes does among us, like a novelty, inexplicable and causeless, or it may be erroneously ascribed to some external cause. We may believe that the probabilities of inheriting a disease decrease as the distance from a progenitor in whom it occurred increases; but we know nothing of the rate of the decrease, and the probability of inheritance does not fall to zero in any such number of generations as we are practically concerned with. There is, therefore, no value in any negative evidence against a disease having been inherited.

I wish this were not true, for I am conscious that, like Brown-Séquard's facts just cited, it leaves one too free to guess at the inheritance of diseases; but it is true, and we must use cautiously the liberty of guessing.

I may here notice a common error of expression which would imply that all qualities inherited are also constitutional. For instance, one hears people say that their inability to digest this or that, or to bear some manner of life, or some kind of air or water, or to exercise some manner of thinking, is constitutional, because it is inherited. It may be so; but, just as likely, it is only an inherited likeness of stomach, or bowels, or lungs, or brain: for family-likeness of course involves a likeness of internal organs just as much as of external ones. A man may have a stomach like his grandfather's, just as he may have a nose or a mouth like his grandmother's; but neither of these would alone signify a constitutional inheritance. Neither would the inheritance of an admirably organised pulmonary tissue, any more than that of a charming complexion. Such inheritances are, indeed, important in clinical study; but they must be studied as personal and local peculiarities, not as constitutional.

MUTATIONS OF LOCAL AND CONSTITUTIONAL DISEASES.

It is often said that local diseases tend to become constitutional, and constitutional to become local; and there is sufficient seeming truth in this to add to the difficulty of defining the two groups.

But the expressions are seldom exactly true. It is true that few, if any, local diseases or injuries can exist long without producing some constitutional disorder, some morbid condition of the whole economy; and in this way it is said that the local becomes constitutional. But it would be more proper to say that the local disease or injury *produces* a secondary constitutional disease, a consequence rather than a continuance of itself. A local disease may be said to *become* constitutional when its materials pass into blood-vessels or lymphatics and are carried unchanged to any or all parts, and in them multiply or grow. Thus a cartilaginous growth, or any of the softest recurrent tumours or sarcomata, may generalise itself and become constitutional; but these are comparatively rare events and accidental.

On the other hand, when the chronic rheumatic arthritic disease has appeared or, as it is said, 'settled' in a hip-joint (for example) it seldom attacks any other joint with severity, if at all; and thenceforward it may seem as if it were a simple local disease. The local morbid process alone may now vary, and the constitutional disease may seem satisfied or determined and ended in a single local manifestation; as if it had *become* local. Similarly, one may find among 'old bad legs' cases of ulcers which began long ago as syphilitic but now appear completely local and may be cured by local treatment. But these cases, again, are comparatively rare and may be fallacious. The more common course is that a disease loses little or none of its constitutional character in local manifestations, or loses it only for a time, as we may suppose in the cases of gout in which general relief is felt during or after a local attack. And the most common course is that, the constitutional disease abiding or increasing in intensity, its local manifestations accumulate: as in gout, or chronic rheumatism, crippling one joint after another, and every year attacking some old or new part; or as in scrofula, in which one sees wretched children with eyes, ears, nose, lips, bones, joints and other parts successively attacked, and all continuing unhealthy till the children die or till, with increasing age, the intensest period of the constitution may be passed.

THE LESSER SIGNS OF CONSTITUTIONAL DISEASES.

Some constitutions, as I have already said, when they are well marked, may be discerned by general aspect or habits, or by singularities of health or of repair of injuries; but, generally, each morbid constitution is to be clearly discerned only in localized diseases, which are characteristic either in some morbid product or in some method of morbid process.

Each of the chief morbid constitutions has, for its signal and complete evidence, a certain localized disease, regarded as decisive; a pathognomon. Gout has the typical transient acute inflammation of joints, especially at the great toe, and, in its longer duration, the deposits of urate of soda; tuberculosis has the tubercular pulmonary phthisis; rickets the ill-developed and ill-grown bone too readily bending; the lithic acid diathesis and the oxalic have their several characteristic urinary deposits; and so on. Similarly, syphilis, whether inherited or acquired, has its distinctive localized signs; distinctive in the same degree and meaning as are the local evidences of fevers and the like pervading diseases.

Commonly, patients are not called gouty, tuberculous, or by any similar name, till they have proved their claim by suffering some typical local disease; but in this there is more of convention than propriety; for they may deserve their names as truly before and after as during the full evidence of claim. For, in all these cases, the local morbid process is a sign, not only of a temporary localized disease, but of a life-lasting general method of work in the whole economy, a method which has been going on to the time of the local disease and will, probably, continue after it.

Consistently with this, each morbid constitution is apt to give to what may be called common disease, such as may be excited in healthy persons, and to the consequences of injuries, certain features of its own, by which the common morbid process is modified in time, or method, or results. Hence we speak of gouty and of syphilitic and of scrofulous 'inflammation' of joints and bones and other parts.

But, further, most of the chief morbid constitutions are indicated by lesser localized diseases, which, singly, may be less characteristic, but, in their combinations, whether in one person or in many members of a family, are not less characteristic of the constitution than is the pathognomon, the signal or typical localized disease.

It would be of the greatest interest in both pathology and practice if we had lists of the lesser diseases which are found only or most frequently in persons in whom, or in whose families, the typical signs of any constitutional diseases have been observed. A specimen of such a list, however imperfect, being collected within only the range of surgery, could be constructed from the lectures on gout (p. 363 *et seq.*). It would include the darting and aching pains in the hands or the feet, their stiffness after sleep, burning palms or soles, tingling or hot patches on any part of skin, pains in a heel, or pain and swelling of an Achilles-tendon; swollen knuckles, whether with general swelling or with bursa-like enlargements over them, or with nodular enlargements of the ends of their bones;

everted fingers, thickenings and contractions of the palmar or plantar fascia not due to injury; occasional grinding, tenderness, and loosening of teeth; peculiar coatings of the tongue, its lesser degrees of psoriasis and ichthyosis; the aching or neuralgia of the tongue or of palate; long, large uvula; thick, glossy, and œdematous palate and pharynx, the dry and choking sensations on their surface; frequent dyspepsia, with flatulence; the 'disagreeing' of certain foods and drinks, chiefly shown in that they produce or aggravate the troubles I am here enumerating; phlebitis, conjunctival ecchymosis, and epistaxis not associated with serious organic disease; frequent excess of lithates in the urine, the apparently spontaneous or metastatic cystitis; gleet, relapsing on small errors of diet; proneness to urethral stricture; thickening of parts of the sheath of the corpus cavernosum; frequent herpes or eczema of the glans, troublesome night erections, a variety of morbid sensations, neuralgia, especially sciatic and lumbar; numbness, tinglings, burnings, 'local syncope,' or dying of fingers or toes; night-cramps and catchings or 'cricks' of muscles; the very irritable skin inflamed by arnica and other irritants which most people bear harmlessly, the frequent patches of eczema and psoriasis, the anal pruritus.

I am well aware that a list such as this, to which another as numerous might be added from the study of medical cases, must seem vague and widely remote from the brevity and accuracy of definition after which nosologists always strive. Yet I am sure that anyone who has carefully studied in a large practice among the richer classes in this country will admit that these disorders are especially frequent, if not exclusively found, in persons or families in whom are also observed the more signal manifestations of gout: the sharp, transient inflammations of joints, the 'chalk-stones,' the nodules in the ears. This being so, the lesser signs may in adequate number be as sure tokens of the gouty constitution as any of the greater; and even a few of them concurring must be weighed in both diagnosis and practice. An equally long list, I think, might be made of the lesser signs of scrofula; and the contrast with those of gout would be as great as that between their typical inflammations; the one acute, quickly transient, leaving no change of structure proportionate to its intensity of symptoms; the other slowly progressive, long-abiding, and rarely ceasing without evident damage of the inflamed parts or production of the characteristic cheesy or tuberculous matter.

Among the lesser signs of scrofula are, permanent incisor teeth with their borders barred, crenated, thin and brittle (unless they can be referred to the defective nutrition attending some casual long illness in infancy); a swollen, puffed, and congested mucous membrane over the lower turbinated bone; long-abiding ozæna, with discharges of scabs; a granular pharynx, more or less thickly scattered with prominent glands, looking like part of the duodenum, with its Brunn's glands; the softer kinds of enlargements of tonsils, the swollen and habitually catarrhal nasal passages, the very frequent 'catching cold;' tendency to acne and to irritable pustular rather than to papular or scaly eruptions; pustules by the cornea, otorrhœa; tendency to chronic periosteal swellings and thickening of the synovial membranes; slowness of healing, 'even a scratched finger festering;' lupus, including perforating ulcers of the soft palate or of the nasal septum; capricious appetite, fanciful, sometimes excessive, often averse from meat; excessive growth of dark hair on the trunk or limbs, or both; swelling of lymph-glands on very slight provocation. If many of these things have been observed in one or more members of the same family, then scrofula may be suspected as a factor in any of their localized diseases, even though none may have had suppurated lymph-glands discharging curdy pus and slowly healing with red-banded and barred scars, or caries of the spine, or 'white swelling,' or any other generally admitted typical scrofulous or tubercular disease. In this, as in the similar cases of gouty, syphilitic, and other constitutions, many small facts may be as significant as a few large ones: the accumulative evidence of probabilities of low degree may amount to proof.

In the further study of the lesser signs of constitutional diseases the design should be to arrange groups of diseases significant, each in its measure and degree, o the several constitutions, whether inherited or acquired As yet such groups cannot be well defined; but th confusion and defects of our diagnosis would be eve greater without such groups as we have than with the. Perfect groups might be arranged, if we could gather facts enough, by making each group consist of those diseases which occur exclusively, or most frequently, in the lives of some hundreds of those persons, or families, in whom a single typical constitutional disease is well marked. And in the selection and study of these lesser diseases we must not be afraid of looking too low or to things that seem trivial. If, for instance, a man can never drink port wine or beer without being made ill, this is not a trivial fact. Nothing is trivial which is natural; and it may be well to remark that we are very imperfect judges of what is less and what more important among the signs of constitutional diseases. We are too ready to be guided by what we regard as types and good specimens; a readiness which has led to manifold errors in both natural history and pathology.[1]

THE DISCOVERY OF CONSTITUTIONS BY INJURY AND DISEASE.

Among the least evidences of constitutional disease, which are yet of high importance in surgery, are some of the instances in which such disease is discovered or brought out by local injury or disease, or by general disturbance of health, as in fever or mental distress. It is a mark of a constitutional disease being highly developed when its local manifestations appear without any adequate external cause; when, as the common expression is, they 'come of themselves,' or after some trivial disturbance such as healthy people bear with impunity; and when they abide long after the external or exciting cause has ceased to act.

But there are many persons in whom slight injuries or slight general disturbances of health bring out no signs of constitutional disease. These are reputed healthy; yet they display the evidences of constitutional disease when their nutrition is seriously impaired either generally or locally. Speaking roughly, the intensity or quantity (I know not which best to say) of a constitutional disease or disposition to disease may be estimated as in an inverse proportion to the amount of disturbance requisite to permit or bring out its local manifestations. A patient on whom I could rely told me that one day when he thought himself well he chanced to break his fore-arm, and in less than five minutes he had a sharp attack of gout in the hand. So, though more slowly in the most scrofulous children, the lymph-glands enlarge and threaten suppuration at degrees of irritation such as in healthy children would be unobserved; in some, 'every scratch festers;' in some, every strained joint inflames.

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[1] On the subject of this section and, indeed, on the whole subject of Constitutional Diseases, Mr. Gant's *Principles of Surgery* should be studied.

In the great majority of cases it may be suspected that when an injury, which has been wisely treated, is not recovered from in due time, *i.e.* in the time usual in healthy persons—for the process of repair is as natural and as time-ordered as is that of growth—it is because of some constitutional disease, or of too long disuse. Of the latter I have spoken in another lecture; of the former you may see cases every day. A man sprains his ankle, and, soon after, there appears, at the place of injury, an inflammation characteristic of acute gout; or it may happen that the shock of the injury, or the general disturbance of nutrition following, lets gout appear in some part even more apt for it than the part recently injured. In another, after similar injury, the trouble lingers with pain and stiffness and occasional swelling, and with constantly increasing distrust of surgery, till some one suspects a low degree of gout and, acting on the suspicion, cures the trouble. In another, however rarely, a wound slowly healing assumes the character of a tertiary syphilitic ulcer. In another, an injured part remains weak and swollen with puffy integuments, often seeming to get well and then, on any exertion, relapsing; never quite free from pain yet never very painful; but slowly becoming more swollen and more misshapen, till it is evidently the seat of scrofulous disease. In another, after, it may be, a period of apparent recovery, a painless swelling appears, and increases, and at length is evidently cancerous.

Now, all these persons, before they were hurt, may have been reputed healthy; and it may be believed of some, of whom these histories have been told, that their constitutional tendency might never have appeared if it had not been discovered by injury impairing the nutrition of a part. The frequency of such cases suggests caution in all instances of injuries befalling persons of known constitutional dispositions. And among those whose dispositions are not known certain suspicions are always wise; as that when, in a middle-aged or older man, an injured joint remains long stiff and painful, without marked heat or much swelling or fever, the delay in recovery is due to some measure of gout or chronic rheumatism. Or, similarly, in younger persons scrofula should be suspected; or in those of any age, when the part remains or becomes the seat of pain altogether beyond a fair proportion to any other of the consequences of the injury, some neurosis should be suspected, such as injury would bring out from a nervous constitution.

The same general rule is made evident, in a different manner, in cases in which a constitutional disease appears in a part which has long been diseased in some other manner. A part long inflamed from simple mechanical or other irritation may become at last scrofulous. A foot or a toe, long irritated by a corn, or slightly wounded in the cutting of one, may, in a diabetic elderly person, become gangrenous. A scar, after being for years 'irritable,' may become cancerous; so may a mammary gland in some part which has long been simply indurated, or in some part to which skin-disease has extended through the nipple; so may a tongue after many years of ichthyosis or psoriasis. The cases are so frequent that they may sustain a general rule, that a part which has long been the seat of constant or often recurrent inflammation or 'irritation' is apt to become cancerous.

I do not doubt that in these cases of cancer an explanation may be given, and may seem sufficient, in which all the changes may be ascribed to merely local processes, to gradual degeneracies, and the acquirement of diffusive and infective properties. But it seems to be more consistent with a general pathology to hold that in cancer, as in the other cases, there are two factors, whose meeting is essential to the production of the complete disease; the one diffused, constitutional, inherited, and, at its maturity, ready to appear in any part fit for it; the other local and consisting essentially in some degeneracy of a natural structure, a degeneracy which may be that of senile or other timely decay, or may be the result of injury or inflammation, or any form of what one must still vaguely call irritation.

But, whatever may be true about cancer, it is clear enough that constitutional diseases which might otherwise have lain hid, or been, as it is said, 'suppressed,' are commonly discovered and made to be manifest by injuries and diseases of parts. A healthy part may maintain itself in health with the materials derived from an unhealthy blood; an injured or a diseased part may not be able out of the same materials to repair itself; and the errors of its method of repair will indicate the morbid character of those materials.

In another manner constitutional diseases may be discovered or brought to light by a casual general disturbance of nutrition.

Some of those discovered by fever might serve to illustrate a large part of the convalescence of fever, a subject of the highest interest and full of promise of utility to one who will carefully study it. The sequelæ of scarlet fever are commonly enumerated; those of typhoid fever, especially those seen in surgical practice, are described in another essay.[1] I doubt whether the reason of the great variety of the sequelæ has in either case been sufficiently studied. It may be that some of the diversities are due to different transformations of fever-poisons; and this may seem very probable, if we compare the sequelæ of different fevers; for those of scarlet fever, for example, are different from those of typhoid. But the differences of the sequelæ of the same fever in different persons are more probably due to the constitutions, or, it may be, to some personal or local peculiarities, of the several patients. This is confirmed by instances in which different members of a family suffer alike. I have referred to the instance of five members of a family having more or less extensive paralysis of muscles after typhoid or typhus fever. And I know a man who had femoral phlebitis, after typhoid, and many years later saphenous phlebitis, connected, I believe, with gout, among whose relatives three cousins and a nephew have considerable varicose veins.

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[1] Page 395.

The influence of mental trouble in discovering constitutional disease is often very marked. Nothing else is so potent in the neurotic. Everyone who has seen much of cancer must have noticed the large number of women who tell of great grief or anxiety just before they found the disease. Fits of gout follow worry and overwork; and syphilis long hidden and forgotten will reappear after fever, or long distress, or ill-feeding, or after mental shock. I remember a hospital-patient in whom a well-marked syphilitic eruption appeared a day or two after fright at seeing a friend die suddenly; yet no syphilitic symptoms had, for some years previously, been observed in him.

Illustrations such as these may suffice to show the general rule that injury, fever, mental distress, or whatever else, may impair the nutrition of the whole or any part of the body, may discover even the lowest degree of constitutional disposition to disease; and, for another rule that there may be no better certificate of health than the having passed through a severe fever, or recovered from some severe injury, without the appearance of any constitutional disease.

LOCALISING OF CONSTITUTIONAL DISEASE.

In the last section many instances are mentioned in which we seem to understand why a morbid condition which is constitutional, or, in whatever form or method, diffused in every part, shows itself in some morbid process in only one part of the body. The general rule indicated by all the cases is, that if a part has its normal process of nutritive maintenance hindered or perverted, it may become fit to be the seat of the local process of a constitutional disease.

It is probable that within the same rule may be included many, or all, of the cases in which the manifestation of a constitutional disease in some part seems to be spontaneous or 'by chance.' The healthy state of every part is maintained by the concurrence of many 'conditions of nutrition;' by a regular and just sufficient supply of healthy blood, by healthy lymph, and healthy nervous influence. So long as these are severally healthy and all in concord, a part once healthy may maintain itself in health; but a change in any one of them may so weaken the force by which the healthy condition of the part is maintained, or may induce such degeneracy, that the part may become the seat of some disease which previously it was able to resist, to exclude, or to expel. The defect or error of one of the conditions of nutrition in a part may thus have the same effect as the disturbance of them all produced by injury or irritation.

It is probable that among the conditions most often determining, after this manner, the local appearance of a constitutional disease is some disturbance of the nervous influence in a part; a disturbance affecting not only the size of the bloodvessels and the quantity of blood but, much more importantly, the relations between the tissues and the blood which are organic or of the most refined chemistry. Crowds of facts make it certain that such disturbance may excite or (as in some cases it may be more just to say) may permit disease in a part. We are obliged, indeed, to speak vaguely of such cases; we do not know the nature of the disturbance; we have to call it nervous irritation, and its results appear inconstant. A thorn in a nerve may, in one person, produce epilepsy, in another neuralgia, in another glossy skin, in another œdema or frequent ulceration in the peripheral distribution of the nerve. Or, if we take only the peripheral inflammations consequent on 'nervous irritation,' the glossy skin, the œdema and frequent ulceration, the herpes, the osteo-arthritis, the centripetal wasting, we seem obliged to conclude that although 'nervous irritation' may be, in all these, the determining cause of the disease, yet the method and product of the morbid process in each case must depend on some other condition than that of the irritated nerve. There are, indeed, cases enough to make it very probable that nervous irritation alone may give rise to certain morbid changes which are alike in all persons, such as those in the glossy skin, in the rapid and often centripetal wastings of limbs, in herpes zona, and in the intensely painful, dry, but not senile, gangrene of fingers. But in many other cases the morbid processes and products are so various that we may, with most probability, ascribe them to the various constitutional diseases for the local manifestation of which the nervous irritation makes this or that part fit.

The point may be illustrated by the cases of symmetrical disease, especially in syphilis. It may be believed that the symmetrical distribution of a disease is determined by a central nervous irritation conveyed along symmetrically arranged efferent nerve-fibres; but the method of the morbid process thus localised, whether a macular, scaly, or pustular rash, a periostitis, or arthritis, or whatever it may be, must be determined by the constitutional condition; that is (as we may surely believe, in syphilis), by the morbid and transmissible conditions of the blood.[1]

I wish it were not necessary to add that, in thus referring to nervous irritation for the explanation of many instances of the localisation of constitutional disease, we do not escape from the difficulty, but only push it a step further off. For the question remains, what determines that one portion rather than another of a nervous centre should be irritated? I have not read and cannot guess the answer.

TIME IN CONSTITUTIONAL DISEASES: CLIMAX, DECREASE, REVIVAL.

A constitution is a lifelong thing; but, at least in its tendency to local manifestations, each constitutional disease has times of lesser and greater development or intensity. And generally we may say that for each there is a time of climax or chief intensity before which it is, and after which it may be, less intense. Thus, speaking generally, scrofula has its climax in early life, gout in middle age, and cancer in advancing years. But the deviations from this rule are not rare. Cancer in some of its intensest forms appears in early life; scrofula and tuberculosis may appear first in old age; gout may appear in the young (though not nearly so often as is supposed, for its name is often used to cover the hated name of scrofula).

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[1] In the papers on Symmetrical Disease published in the *Medico-Chirurgical Transactions*, in 1842, by Dr. William Budd and myself, it was held that the symmetry of disease was due to some morbid material in the blood incorporating itself in the product of disease, and having a chemical affinity to the tissues so refined that it could combine and be incorporated with only those parts of a tissue which had perfect identity of composition—such identity as existed only in the symmetrically placed portions of each tissue. I believe that the same view may justly still be held in regard to the methods of the morbid processes in symmetrical diseases, though the localising of the process may, in each case, be determined by a central nervous irritation. Even in the phenomena of symmetrical diseases there are facts hard to reconcile with a belief that the state of the blood determines the locality, as well as the method, of the morbid process. It often happens that an eruption, for example, appears a few days later on one side than on the other; and it is, clearly, more probable that the symmetrical distribution of diseases on corresponding portions of the upper and the lower extremities should depend on their central nervous relation than on any assumed identity of chemical constitution.

This occasional untimeliness of climax in constitutional diseases should be well remembered for the sake of keeping safe from serious errors of diagnosis. The mistakings of cancer for scrofula in early life, and of scrofula for cancer in old age, appear about equally frequent; and both are more frequent than they should be.

In the cases of those constitutional diseases whose climax is most frequently attained in the earlier part of life there may be so great a decrease of intensity, after the climax is passed, that a patient may seem to have outlived his tendency to localised disease. An apparent outliving of a morbid constitution is of practical importance in such cases as those in which a scrofulous joint is amputated or excised. The probabilities of a favourable recovery depend mainly on the degree in which the scrofulous constitution may have declined from its highest degree before the operation is done. It is desirable that it should have declined not only so far that the local disease should be stationary, but so far that the scrofulous constitution may not be made more intense by the fever and other disturbances of health which may follow the operation.

In like manner, one form of the nervous, or neurotic, constitution, the hysteric (so called), may be in great measure outlived. As years advance the vivacity of the central nervous organs becomes less; impressions are less keenly perceived, less widely and less vividly reflected; the power of attention, even of self-attention, is diminished; and after fifty there are comparatively very few nervous imitations of organic diseases. There are enough to make one cautious in diagnosis; but the chief caution must be lest organic disease should be overlooked in what is thought to be hysterical.

But whether a constitution can be in any degree or measure outlived may depend, not only on its own nature, but on the time of life at which it attains its highest development. The scrofulous may thus appear to be outlived, for it usually tends to decrease before middle age; the rheumatic, or that form of it which is marked by acute rheumatism, may similarly be outlived. The gouty and rheumatic-gouty are very rarely outlived. The cancerous constitution is not outlived even in appearance, unless in cases too rare to be reasoned on; and this not only because of its usually mortal cachexia, but because in a constitution it most frequently attains its climax in advancing years, and therefore, in any single case, may be expected to become more intense as years advance.

We may connect with these facts some of the differences of the results of amputations. If a scrofulous limb is removed from a young person there is, often, no further serious local manifestation of scrofula; but of the cases in which I have seen scrofulous limbs removed at or near middle age, the majority soon showed scrofula in other parts or died tuberculous. When it was not very rare for limbs to be amputated for neuralgic joints the stump commonly remained neuralgic for many years, but at last became quiet when the nervous constitution became less dominant. But of all the amputations of cancerous limbs that I have known, at whatever time of life, only one has been followed by freedom from cancer for more than five years.

But, in connection with this occasional outliving of a constitutional tendency to localised disease, it must be remembered that a constitution, which may have been unmarked or may have declined in one period of life, may at a later period, and in advanced age, gain prominence and manifest itself in severe local disease. It would be unsafe to suppose that one who has been constitutionally unsound in childhood—suppose, with rickets—is ever the same in his relations to diseases as one who was in childhood sound. I do not know the signs other than those of form, by which he might be at any time of life distinguished; but I cannot doubt that there are such signs, and that by close analysis they might be discerned. The instances of re-appearance of constitutional disease, after many years of seeming health, are far from rare. Thus syphilis sometimes reappears after many years in which it has been forgotten; senile tubercular phthisis is well known; and in the paper on 'Senile Scrofula' I have shown that there is, probably, no scrofulous disease which may not be found, with all its usual characters, in even the oldest people, among whom some may have been evidently scrofulous in early life, and some may have shown no previous evidence of scrofula.

Let me add, in illustration of the whole rule, some recent cases of this fact. In a man of 82 I found abscesses in the scrotum and perineum, with no appearance of urinary or other local cause, undermining and opening in many directions. I had long known him as one of the finest, sturdiest men of his age; active and a leader in business and society. I half-apologised when, seeing no possible origin for his abscesses but senile scrofula, I asked him if he had ever been suspected of consumption or anything of the kind; but his answer made his case clear enough. He had a family history of consumption, and himself had had frequent attacks of hæmoptysis connected, as he had been told, with disease in the upper part of his right lung. His abscesses remained unhealed till he died, at 84. He illustrated, what I think, is a general rule: that, the older the scrofulous patient, the less is his chance of complete recovery from any local manifestation of his disease; the less is the good influence of all the means that appear most useful in the young scrofulous. So, in a lady, past 80, who had well-marked scrofulous periostitis with suppuration on the upper part of her sternum. It went on long enough to have healed in a young person, and it showed no untoward changes, but simply it did not heal, and it seemed to hasten the infirmities of old age with which she died. And another, at 91, had scrofulous suppuration in her lower cervical glands, such as could not be distinguished from that which is oftener seen at 9 or 19; and this slowly healed; but it impaired the good health with which she had previously enjoyed an active life, and she died with the next attack of bronchitis.

SUCCESSIONS AND COMBINATIONS OF CONSTITUTIONS.

Thus far I have taken illustrations from cases in which the constitution manifests itself in tendencies to diseases of one type, various in degree but not modified in quality. But a man may combine in his own constitution, in any diversity of proportions, parts of the constitutions of many ancestors, and may add to them some peculiarity of his own; for no inherited likeness is perfect. I cannot here trace out all the confusions hence resulting, but I would recommend the study of it under such titles as the Successions, the Co-existences, and the Combinations of Constitutions.

SUCCESSION OF CONSTITUTIONAL DISEASES.

If I speak of one constitution being succeeded by another, this must mean only that at one time of life one constitution is more fully developed than another, and makes itself manifest by localised diseases, while the other remains unobserved. It is not rare to find a patient with scars of scrofula endured in early life and with nodular or otherwise altered joints that were the seats of gout in later years, and who now has cancer.

A gentleman 75 years old had had psoriasis for thirty years, and during twenty-five of these he had taken a grain of calomel (in five grains of Plummer's pill) every night, enjoying all the time excellent general health. At 75 epithelial cancer appeared and quickly increased on one of his little fingers. I amputated the finger, and during his recovery from the operation he had his first attack of acute gout, a family disease, with which his brother, 80 years old, was at the same time suffering. He died within a year with cancer in his axillary glands.

Many curiosities of succession of this kind might be traced in the lives of old invalids, and many vain attempts might be made to describe the processes which must in the same person be simultaneous; the gradual development of one 'method of life,' the completion and outbreak of another, the decline of another. But the subject is one of more than curiosity; it has a practical bearing, especially in diagnosis. The local evidences of a constitutional disease passed-through should not give us an overweight of prejudice in favour of suspecting the same disease in all that comes after. It may be present, indeed, in some lower measure, and, as syphilis and gout commonly do, may give a tone to any other localised constitutional disease; but the local evidence of one constitution succeeding another may be clear enough and must always be watched for.

I have been impressed with the need of this watching for a succession of different constitutional diseases by cases in which gout has been succeeded by scrofula. For instance, a patient at middle age had inflammation of the tarsal part of the foot, with excessive heat and redness and other signs, from which no one hesitated in concluding that he had the gout, which he was known to have inherited. But there was no timely subsiding of inflammation, or mere remnant of pain and stiffness and some swelling, such as should have happened with gout; but after several months a still abiding soft and pulpy swelling about the tarsus, with dull aching, and with inutility, wasting of the leg, and other features quite characteristic of scrofula. The case required for its recovery many months of treatment with splints and care of the general health, and means that would have been very inappropriate for gout; and during the recovery the patient's daughter had scrofulous disease of the hip-joint.

Such successions of constitutions may be noted in many other cases. Patients will tell that they were very weak in childhood but grew up strong; others, that they were hysterical or in some way always nervously disordered till they were at middle age, and became in some other way disordered. Not rarely one who was tuberculous in early life becomes at some later time cancerous. I have seen a woman 60 years old who had had well-marked scrofulous disease of the elbow-joint for twenty years, and in whom at the end of this time large epithelial cancerous growths had formed over the orifices of the sinuses leading into the suppurating joint. She had, also, massive cancerous disease in the axillary lymph-glands. In all these cases alike we may say that one constitution has been succeeded or become dominated by another.

CO-EXISTENCE OF CONSTITUTIONAL DISEASES.

Between the co-existence and the combinations of constitutions a fair distinction may be made. Two or more may *co-exist* in the same person, and may appear at the same time, in localised diseases, without mutual influence, unless in things not essential to either; or, two or more may *combine*, with such mutual influence that the result may be called an intermediate, hybrid, or compound disease. Thus gout and tuberculosis may co-exist, and neither of them may modify the characters of the other; so may gout and cancer, and so may any form of nervous constitution co-exist with gout, or scrofula, or, I suppose, any other constitution, without modifying any of its characters except those which are due to nerve-phenomena.

But, although two diseases may thus co-exist without close combination, yet their mutual influence always needs consideration in practice. Cancer and gout are often found together, and each may pursue its separate course, the cancer in one part the gout in another. In the case already related of the patient who had cancer, gout, psoriasis, and habitual calomel, I could not see that one of these had any influence on another. Yet there are cases in which the co-existence of cancer and gout needs care in treatment; for in patients who have both, the cancer (as I have observed, especially in those in the breast) is very liable to inflammation and consequent severe pain. I cannot be sure whether this is due to the gouty constitution or to the plethora with which it is often associated; but I think I can be sure of the fact, and that it is one of the grounds, perhaps the only one, for the reputation of liquor potassæ in the treatment of cancer. Sir Benjamin Brodie used to give this medicine in a large number of cases of cancer and of doubtful tumours. I do not doubt that it was often useless; but he was too wise a man to give anything often which never did good. I have given the liquor potassæ, in the usual doses of a drachm three times a day, largely diluted, and have often seen no effect produced. In one case, indeed, in combination with small doses of iodide of potassium, it seemed to cause the absorption of a great mass of medullary cancer of an undescended testicle; and this not only once but, after recurrences, thrice. But, frequently, I cannot doubt that it has given relief from the burning, aching, and bursting pains which have been connected, I think, with inflammations of the cancer—such inflammations as I have thought most frequent in gouty and phlethoric patients. To the same or some similar combination of other maladies with cancer may be ascribed, I think, some little good that Missisquoi-water sometimes does. Its influence on cancer itself is, I believe, absolutely nothing; but it sometimes gives comfort 'by the way.'

The co-existence of cancer and general neurosis must be studied. Few diseases are more various in painfulness than cancer. It is not very rare to find patients who pass through the whole course of cancer to their death without great suffering. I remember one who begged that her breast, with a great mass of ulcerated cancer in it, might be removed, only because she could not endure the sight and smell of it: of pain she said nothing and felt very little. Others endure agonies; and we may be unable to detect anything in the local conditions of the different cases to explain this great difference in their degrees of pain. The difference must depend, I think, on the different characters of their several nervous systems, and in those who suffer most we may generally believe, for we often see, that a morbidly neurotic constitution coexists with the cancerous. Wherever this occurs the two constitutions should for treatment be considered separately; and the neurosis should be dealt with as if it were the patient's only trouble.

It would be difficult to overstate the utility of studying the co-existences of different constitutional diseases in the same person: in each case each of the diseases may need to be separately treated. The study may go with that of the so-called antagonism of diseases. Some appear very rarely to make progress at the same time. Cancer and syphilis, I think, very rarely do so, even when, as commonly happens, cancer has its first seat on a tongue or lip that bears marks of syphilis. And cancer and tuberculosis, though their effects are often found in the same body, do not, I believe, make progress together; when one is active the other is slow or stays; and sometimes they appear in nearly alternate progress, as if in a strife for which shall kill.

COMBINATIONS OF CONSTITUTIONAL DISEASES.

In the combinations of constitutional diseases the characters of two or more may be so mingled that a localised disease may combine the distinctive features of both or all. Thus gout and scrofula may be combined. I think it was such a combination that I saw not long since in a patient, 63 years old, who had well-marked scrofulous disease in the metatarso-phalangeal joint of a great toe. Her father, four brothers, and three sisters died young with consumption; and her one living brother was gouty. It seemed as if inherited scrofula had determined the general character of her disease, and inherited gout its locality.

Gout may modify, I believe, the characters of any inflammation, and give it an intense paroxysmal painfulness quite disproportionate to its other signs. I have seen even a pyæmial abscess thus made very painful in a gouty man.

Very important are the combinations of syphilis. Among all constitutional diseases, whether it be inherited or acquired, syphilis appears to be the most miscible (if this expression may be allowed), and the methods and degrees in which it is modified by the several constitutions of those into whom it is introduced deserve much more study than, so far as I know, they have yet received.

A general survey of a large number of cases of syphilis justifies a general description of the disease which may be generally true. But in this large number of cases some would be found not conformed to the general description. It would be difficult to find two persons who, being inoculated with the same syphilitic poison, would display exactly the same consequences from beginning to end. Why would they not? We must not talk of chance or accident; and differences of circumstances would seldom suffice to explain such differences of result. These differences seem due sometimes to previous diseases, sometimes to inherited local liability, but more often than to all other things together to the differences of the constitutions of those into whom syphilis is introduced. This is, I think, most plainly seen in tertiary syphilis; though, indeed, it is seldom difficult to discern it in the course of even primary syphilis. In tertiary syphilis I cannot doubt that, in the great majority of the cases in which the ulcerative processes predominate, the acquired syphilitic constitution is combined with a scrofulous or tuberculous one, while in the majority of those in which diseases of joints or bones without ulceration prevail, the syphilis is combined with an inheritance of rheumatism or gout.

In any given case it may be very hard or impossible to analyse the complex constitutional state which results from inheritance, from syphilis, from treatment, from variety of circumstances; but one broad rule of practice may be safely laid down—that in every case of syphilis it is essential to discover, if possible, the inherited constitution of the patient and, in any necessary degree, to treat that constitution at the same time as the syphilis is treated. Thus to anyone who has marked scrofula, or tuberculosis, or a tendency to it, mercury is to be given only with extreme caution. In such patients it may often be better to leave even primary syphilis to its own course than to give mercury; and when it is given it should be in conjunction with cod-liver-oil or iron and good food, and whatever other means may be necessary to avert the risk of hastening the course of the scrofula or tuberculosis. The same rules must be held in the later stages of syphilis. The tuberculosis or the scrofula, or whatever else, must be treated at the same time as the syphilis, not only for their own sake but because they hinder the right action of the remedies specific for syphilis.

This seems to me very marked in many cases of the combination of gout and tertiary syphilis. The diseases of joints, the muscular and neuralgic pains, which are most commonly the results of the combination, are sometimes tractable with iodide of potassium given in any ordinary way; but often they require, or at least are much more quickly cured by, the combination of remedies for gout and syphilis. In many such cases iodide of potassium, given in even large doses in the ordinary manner of a draught, has appeared nearly impotent; and then, with no other change of conditions, has been effective when even small doses were given largely diluted with some alkaline water, and with regimen appropriate to the lesser forms of gout. It is on this principle, I think, that we may explain a great part of the success of treating syphilis at some of the health-resorts of the Continent. The syphilitic and the rheumatic or gouty or other constitution are treated at the same time; and mercury or iodide of potassium is given while the patient submits to the 'waters' and the prudent regimen.

I might multiply such suggestions for practice, but they would all come within the same rule of the necessity of discerning the two or more constitutions which may not merely co-exist but be combined in the same person, and of regarding both or all in the treatment of every localised disease, even though the characters of this disease may suggest that it is an expression of only one of the combined constitutions.

This must be a rule of practice, even though the analysis of constitutions which it demands may be sometimes as impossible as it would be to discern the original nationalities incorporated in an average Englishman. Constitutions may be combined in the most various numbers and proportions, and sometimes with such closeness that one cannot assign to each its part in the whole result. There may be complete hybridity, in which one can only say that each part of the result is a little more or a little less like one or the other of the original constitutions. Such hybrid diseases seem to be those of the confused group of what are called rheumatic gout. In the combinations of gout and rheumatism there appears an intricacy past clearing; and unhappily the difficulty extends beyond diagnosis into treatment. Whatever forms we may try to define with such names as rheumatic gout, chronic rheumatic arthritis, rheumatismus deformans, and the like, cases are easily found completely filling the intervals between the groups; and as to treatment it seems only too true that in the same degrees as the cases deviate from the typical characters of gout and rheumatism so do they become less amenable to the treatment useful for either when apart. Curiously, too, the hybrid disease is comparatively insusceptible of the ill consequences of the errors of diet which aggravate gout and, in a less degree, rheumatism. Many of those who have the most marked chronic rheumatic arthritis, which seems to be a form of combined gout and rheumatism, can eat and drink what they please, with at least as much impunity as most healthy people can.

LESSER CONSTITUTIONAL CONDITIONS.

What I have said may suggest the need of a much more constant habit of analysing constitutions than most of us are in practice accustomed to. We are commonly content to speak and think of one man as gouty, of another as scrofulous, another as nervous, and so on; just as we are apt to say that one man is good, another bad; or that one is cunning, another silly, and so on. But in neither moral character nor health-character is it common to find singleness or simplicity. In all characters are many constituent elements; one may be very dominant, but the rest are not often so trivial that they may be safely neglected. Certainly it is necessary to good practice in either surgery or medicine that no element of a patient's constitution should be quite overlooked. Many of those which we commonly speak of as if they were single and self-complete constitutions may be mingled in the same person, and yet more varieties may be derived from the combinations with them of some lesser constitutional conditions.

Among these is that condition of which I have often spoken as 'cold-blooded.' There is no condition which may not be modified by it, and the peculiarities suggesting the name should always be observed: the habitual coldness of the feet, the coarse dusky-pink papillary condition of the skin of the legs and the back of the arms, the too venous appearance of parts that should be ruddy, the general inactivity and torpor of all the functions, the frequently scanty painful menstruation. For with these things there commonly coincide a low power of resisting the ordinary causes of disease, and a slowness of recovery from disease and injury; and, with whatever other constitutional defect or disease the coldness may be combined, its need of good food and warmth, of long sleep and, generally, of tonics must be borne in mind.

And there are constitutions even less defined and less signalised than these which yet should be observed. Thus we speak of the weak and the strong in constitution, and the terms are not unmeaning. Generally, men are called strong or weak according to their capacities for work or pleasure, for mental or muscular efforts; but these capacities have no constant or necessary relation to strength or weakness of health, though they are often found together. The highest strength of constitutional health is shown in that very rare state in which a man passes through a long life without disease, and dies of old age, all his functions becoming gradually less active and all ceasing at the same time. This state may be where there are few, if any, of the popular evidences of health. A man of 96 told me that he had never deemed himself a healthy man; and another nearly as old, who had never suffered anything worse than slight indigestion, said that he had never enjoyed health. Neither of these had been vigorous in mind or body, but in both there had been the main characteristics of 'strong' health, namely, such tenacity of composition in every part, and such balance of them all; as cannot be disturbed by the ordinary forces of disease, or, being disturbed, can be quickly and perfectly recovered.

The opposite of this is in the 'weak' constitution; the condition very easily moved to disease, very slowly and imperfectly recovering, yet in disease showing no specific character, no constant or well-defined morbid method of nutrition or excretion. They who are thus weak cannot bear with impunity any of the ordinary causes of disease, as fatigue or great heat or cold: 'every little thing makes them ill;' their illnesses 'come of themselves;' from exciting causes too slight to be observed.

But a simply weak constitution is as rare as a simply or completely strong one. The instability which is weakness is generally associated with some definite character of disease; with the scrofulous or gouty or some other morbid constitution. Still, mere weakness must be reckoned among the important elements of personal character in respect of health and disease, as surely as it is among those of mental character or muscular power. And, I repeat, muscular or mental power is not to be taken as a measure of health: in the view of pathology a gouty person is weak in the same sense as a scrofulous or a syphilitic one.

Sir William Jenner points out a very notable characteristic of some constitutions. He says: 'Certain primary constitutions seem more prone than others to suffer from these less contagious diseases. We must all be acquainted with families that exhibit these proclivities. I have known diphtheria, for example, occur in four members of a family at long intervals of time, and at localities widely separated. One suffered in London, one at Brighton, one at Scarborough, and one at some other place in the country, and these several cases occurred at altogether different times. Now, when we consider the infrequency, comparatively speaking, of diphtheria, such a fact as this shows, on the part of the members of this family, a great primary constitutional proclivity to this disease.

'I have known six out of seven males of a family suffer from typhoid fever, no two of the cases occurring within less than two years' interval, and no two at localities within less than fifty miles of each other; while in the same family one only of the same number of females suffered from typhoid fever. Here, again, there must have been a great proclivity to typhoid fever on the part of the males of that family.'[1]

Again, there are notable differences of constitutions in respect of the times in which the course of life is run from birth to death in senile degeneration. Living to old age 'goes in families,' and so does dying before old age. The time in which the changes ending in the senile degenerations are achieved is in the one group of persons much longer than in the other. Often, indeed, the earlier or later dying is because of inherited diseases, of which some are earlier, some later, developed. But sometimes it is plainly because the degeneracies of old age are quickly reached; not only, it may be, in the hair or teeth, but in much more important structures, or in all parts. It is probably due to this that in some families many members die at or near the same age, soon after middle life; and these do not all die of the same disease, but it may be of various casual diseases or injuries, as if they had all lost before the usual time the powers of repair.

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[1] Address at the Clinical Society, February 1875.

Another unpunctuality of life is observable in the cases of delayed puberty, and of delayed maturity of manhood or of womanhood. This may be seen in some who, in early life, have had severe illness which seems to have delayed their development; but in others, and not rarely in several members of the same family, the delay seems to be only because the same changes are more slowly wrought in these than in the average of the same race or class of persons. The speed of life is not the same in all.

But, to conclude, if we could imagine a time or a state of knowledge in which all the most prevalent and well-marked constitutions or health-characters should be known and described, yet there would be very frequent instances of persons presenting conditions previously unobserved. Some of these would probably be of the nature of monsters, whether by arrest or excess of development, for we limit the word too narrowly when we use it only for congenital errors of form: there must be just as many or more monstrosities of minute structure and composition. But, probably, more of the very rare or new conditions of disease would be derived by inheritance. The combinations through mingled inheritances of many generations must be past counting, and among them must be many the like of which have not occurred before. Hence come unique and rare cases of disease. Rare cases deserve to be thought of for much more than their curiosity. It may be impossible to guess safely at the concurrence of conditions through which can result a disease which does not affect more than one in a million of a population; but it is worth thinking of. The concurrence from which comes an instance of very rare disease is justly comparable with that of which the result is a brain of rare power or the whole rare construction of a king of men.

NOTES.

Note I.

In his preface to M. H. Petit's French translation of the Clinical Lectures and Essays, Professor Verneuil states that, while the 'Risks of Operations' was published in July and August 1867, it was, by a singular coincidence, in the same year in August that he communicated to the International Medical Congress of Paris a Note on the influence of dietetic conditions on the results of surgical operations. Since that date Professor Verneuil has made the question an object of long and careful study, and has also examined the effects of injuries and operations on the different diatheses, and on the diseases of the heart, liver, kidney, and other important organs. At the same time, many of his former and present pupils, stirred by their devotion to so distinguished a master, have joined him in his labours, and produced a large number of essays on the various branches of the subject. Many of these, especially MM. Petit's and Berger's, are important contributions. Efficient abstracts of the different essays are published in the *Revue des Sciences Medicales*, from 1867 onwards. The main conclusions may also be found summarised in M. Berger's principal thesis, 'De l'influence des Maladies Constitutionnelles sur la marche des lésions traumatiques,' Paris, 1875.

Note II. page 6.

In the following note I have endeavoured, by using experience gained at the Children's Hospital, to discuss the various risks of operations in childhood more at length than the space that could be allotted to the subject in the text would permit.

A few hours of acute pain will suffice in young children to induce a dangerous degree of collapse. This was shown in a case of strangulated hernia of only about sixteen hours' duration, in a boy four months old. Strangulation set in at about five in the afternoon, and the child was in great pain, and was screaming almost incessantly through the night. In the morning he was very pale, with pinched features, eyes dull and sunken, pulse small, rapid, and hardly to be felt at the wrist; respiration hurried and shallow, skin cold and clammy, and there had been several slight convulsions. After his hernia had been reduced by operation he rallied at once, and all symptoms of collapse soon disappeared. Another child, two years old, the particulars of whose case were sent from the country, died apparently of the pain and terror caused by the repeated dressings of a burn on the trunk and lower limbs. During the intervals between the dressings he appeared to be doing well, and his wound, at the end of a fortnight, was covered with healthy granulations: but each of the dressings left him in a prostrate condition, and after one of them he died. On two or three occasions young children who have been sent to their homes after operations for hare-lip, or the ligature of large nævi, and have suffered severe pain for some hours subsequently, have been found next morning in considerable peril from shock. Happily the means in use for preventing or relieving pain in adults may, with proper caution, be safely employed for children. All know how well even weakly and puny infants a few days old take chloroform. It should be given not only for painful operations, but also for painful dressings. From what was reported at the time it seemed probable that the burn-case just referred to would have ended in recovery if chloroform had been used when the wound was dressed. Opium must always be given with great care as to its quantity, and, as Dr. West[1] points out, in preparations of uniform strength; but thus employed it is perhaps the most valuable medicine that children ever take. At the Hospital for Sick Children, opium, chiefly in the form of the tincture, is constantly prescribed after operations and otherwise, just as it might be for adults.

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[1] *Diseases of Infancy and Childhood*, 4th ed. p. 20.

It is often said that children bear the loss of blood badly. It would lead only to evil if doubt were thrown on this belief in a form that could, by any possibility, produce a disregard of hæmorrhage in operations on children: yet it may be questioned whether the opinion is well founded. I have on two occasions known children make a good recovery from operations which left them blanched and nearly pulseless. One of these patients was an infant eleven days old, from whose parotid and pterygo-maxillary regions a large congenital cystic tumour was removed, through an incision reaching from the corner of the mouth to the zygoma. In the other, a boy aged three, a cyst in the neck had been punctured, and was soon afterwards found so distended with blood that it was necessary to lay it freely open. When this was done, by Mr. Thomas Smith, profuse hæmorrhage occurred from some vessel deep in the neck which had probably been wounded at the former operation. In some cases of hæmophilia children who have bled very largely rally with surprising rapidity as soon as their bleeding can be stopped. In a case of repeated secondary hæmorrhage, after lithotomy, a boy aged three lay for a fortnight blanched to an extreme degree, yet he quickly recovered when his bleeding ceased. In a boy, aged six, in whom an abscess connected with hip-disease was opened, bleeding from the wound was overlooked till he had become pale and faint; but in a few days all traces of the occurrence had disappeared. I am not aware of any case of death from hæmorrhage after an operation at the Children's Hospital.

Convulsions might be supposed to follow large hæmorrhages in children, but later experience confirms the observation of Sir William Fergusson, that they are extremely rare from this cause.

Convulsions having been referred to, this may be the place in which to mention a danger occasionally attending operations on children. A child about three months old, who was operated on or hare-lip, after passing eighteen hours without any symptom of danger, became suddenly convulsed, and died in a few seconds. I afterwards learnt that he had previously been subject to convulsions. I have heard of another almost precisely similar case. There was doubtless a special element of danger in these instances, for the breathing space to which the children were accustomed had been suddenly very much curtailed by the operation, so that asphyxia was readily induced; yet the result suggests that in all cases of operations on children it is prudent to ascertain whether there is a history of previous convulsions.

The various exanthemata should not be lost sight of in their relations to the surgery of childhood. Allusion has been already made (p. 349) to the effect which operations frequently have in determining the appearance of scarlet fever. No similar relation has been observed between operations and measles, or indeed any other zymotic disease besides scarlet fever. But care must be taken that operations are not performed upon children during the incubation-period of these disorders, or during even slight feverish attacks; and it is wise, if there be any doubt as to the patient's state, especially if his temperature be higher than normal, to wait for the certainty which a few days' delay will bring. Bronchitis, cough, and even a severe catarrh, have all led to the failure of plastic operations in children. And there is need for equal care that operations are not undertaken in those who have recently passed through any exanthem, or other serious illness. A dermoid cyst was removed from the brow of a girl, five years old, who appeared in good general health. Such extensive sloughing followed, that when the wound had scarred, the eyelid could not be closed. It then transpired that the child had recovered from a severe attack of measles less than a month before.

At p. 5 Sir James Paget has pointed out that children are singularly little liable to pyæmia after wounds; a strange contrast, he adds, to their liability to it in connection with acute necrosis. In the few instances which are exceptions to this rule the affection usually proves to be of a milder and less fatal type than that which prevails among adults. Children not seldom recover from an attack of pyæmia which is very acute at its commencement, and which would generally be quickly fatal in older people. This comparatively favourable issue is due probably to the perfection with which the unimpaired organs of children perform all the processes of elimination and excretion. In children, too, medicines, specially the hyposulphites, and the various preparations of cinchona, have appeared more efficacious than they are in adults.

Rigors are rarely seen in children, in whom their place is taken by convulsions. Dr. West,[1] referring to this subject, remarks: 'The disturbance of the spinal system which ushers in fevers in the adult shows itself by shivering, while in the child the same disturbance often manifests itself by convulsions.' This observation should be borne in mind, especially in cases in which pyæmia is likely to be devoloped. The occurrence of a convulsion under such circumstances may afford valuable evidence for diagnosis, just as shivering may in the adult; but unless care be taken this symptom may easily lead to error.

Diseases of the liver and kidneys must be looked for and, if detected, carefully considered as to their bearings on operations in children; but the rules used for adults may be somewhat modified for children. The affection of these organs is generally either fatty or amyloid degeneration, depending on prolonged suppuration (p. 30). In the advanced stage of either form, operations are highly dangerous. But, on the other hand, these conditions are not incurable, and instances might be given in which enlargement of the liver and albuminuria have completely, though very slowly, disappeared when suppuration ceased; and operations performed while these affections were in their early stage have not been adversely influenced by them. An operation is not improper, but under favourable local conditions rather called-for, while these diseases are incipient, for, by limiting the amount of suppuration, it may be the means of arresting their further advance.

At p. 36 attention is drawn to the possibility that, during the feverish condition which may follow an operation, latent tuberculous disease may become fatally active; and an instance is given of a man in whom acute meningitis set-in while he was feverish after the opening of a large axillary abscess. This is a source of danger that should not be forgotten in children, in whom tuberculous diseases are comparatively common. Some years ago Mr. Thomas Smith excised the hip-joint of a boy about six years old. Next morning the patient became comatose and convulsed, and within a week he died. At the post-mortem examination several large masses of yellow tubercle were found in the substance of the brain, and the cerebral meninges were in a condition of recent inflammation. In another case a girl was admitted with hip-disease, and was soon afterwards placed under chloroform while her limb was brought into good position. She recovered naturally from the chloroform, but next day became drowsy, and soon showed conclusive signs of tubercular meningitis, of which she died within a fortnight. Her history was not clear, but there had been headache and fever before her admission. It may be, therefore, that meningitis had already commenced. Still, even so, the case may be useful as showing how much care is necessary to avoid the appearance of sometimes doing mischief.

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[1] *Diseases of Childhood*, 4th ed. p. 34.

The period of the first dentition is unfavourable for operations, and should if possible be avoided. Children are not only irritable and fretful during this process, but are also often disturbed both in their sleep and their digestion; and are not rarely attacked with exhausting diarrhœa or with convulsions. The dyscrasia of syphilis unfits infants for plastic operations.

Children are sometimes found to be suffering from serious constitutional disturbance and exhaustion consequent on severe local disease, such for instance as stone in the bladder; and the question arises whether they should be operated-on at once, or should first be prepared for operation by rest, good food, sedatives, and other appropriate means. Two or three years ago a boy with stone, admitted, under the care of Mr. Willett, into St. Bartholomew's Hospital, was already so much reduced by prolonged suffer[illegible] it seemed doubtful whether lithotomy might not fatall[illegible] maining strength. Mr. Willett, however, with th[illegible] of all his colleagues who saw the case in consultation, determined to operate immediately. The boy rallied at once, and made an uninterrupted recovery. In another case lithotomy was performed on a boy aged two, who was reduced to an almost dying state by pain and frequent diarrhœa. He also recovered without drawback, and his diarrhœa ceased a few hours after the stone was removed. These cases fairly represent general experience on this point, by indicating that immediate interference is usually safer than delay.

Note III. page 12.

In his essay 'De la syphilis dans ses rapports avec le traumatisme' (Paris, 1875), Dr. Henri Petit states that syphilis may attack wounds either when they are quite recent, or after some days, or weeks, or after a still longer period. It may take the form of a true syphilide, or, without assuming any specific aspect, may lead to ulcerations which do not heal; or, without producing ulcerations, may either prevent or delay the healing of a wound. At the outset the specific nature of these affections of wounds may be difficult to recognise, but when a wound, without appreciable cause, becomes the seat of ulceration without presenting the marks of any other diathesis, it is well to suspect syphilis and use specific treatment. M. Petit relates cases in which recent wounds, leech-bites, and the incisions for tracheotomy, and a variety of plastic and other operations, became the seats of syphilitic ulceration. Professor Verneuil and others allude to the failure of plastic operations in the syphilitic, and advise that patients who have had constitutional syphilis should be subjected to specific treatment before operations are performed upon them.

Note IV. page 16.

Mr. Savory, in his lectures on the Examination of Patients before operating on them (*Brit. Med. Jour.* 1873, vol. i. pp. 55, 107), has some important remarks on the preparation of patients for operations, and he refers especially to such as are intemperate. In these, if an operation is unavoidable, he considers it very important, when circumstances permit, to postpone its performance for a time, in order, by regulating the habits and diet of the patient, and promoting the elimination of refuse material from the system, to bring about a more promising state of health, and he insists on the considerable improvement which may be secured in some cases by even a few days' delay. He discusses the propriety of suddenly altering long-continued habits of intemperance in the immediate prospect of an operation, and concludes, that although this course may sometimes involve large risks, these are certainly less than those that beset a patient in whom all preparation has been omitted.

But Mr. Hutchinson says: 'In a multitude of cases, patients of the most various conditions of health have come under my observation on account of injuries to the scalp, and my observation has been that intemperate draymen, and persons whose general health was very far from satisfactory, have often presented us with the best instances of rapid healing. On the other hand, I shall subsequently show that the most healthy and temperate have often supplied us with examples of osteitis and pyæmia.'—'Lectures on Injuries of the Head.' (*Med. Times and Gazette*, February 13, 1875.)

Note V. page 18.

Many surgeons who have practised in India confirm this statement without a moment's hesitation. And yet a somewhat different impression is derived both from the reports and statistical tables that have been published of the results obtained in various native hospitals and dispensaries of India, and from the opinions of Sir J. Fayrer and, as regards other coloured races, of Professor Peaslee, of New York; and both these are names of high authority on the subject.

Sir Joseph Fayrer has given the following statistics ('Indian Annals of Medical Science,' vol. x., 1865–66):—Of 32 amputations performed at the Medical College Hospital in Calcutta, namely, 1 at the hip, 3 through the thigh, 10 through the leg, 4 (by Syme's operation) at the ankle, 5 at the shoulder, 5 through the arm, and 4 through the forearm, 18 were fatal. In 9 death resulted from pyæmia following osteo-myelitis; in 3 from pyæmia not connected with bone-disease; and in 6 from tetanus, gangrene, or exhaustion. In a total of 115 amputations performed in the latter half of 1863 in 180 hospitals and dispensaries in the Bengal Presidency, 26, or 1 in 4·4, were fatal. In 68 cases of lithotomy in the same Presidency 8 were fatal, or 1 in 8·5; and in the North-West Provinces and the Punjab, in 555 cases 57, or 1 in 9·7, were fatal. A native surgeon, Babo Ram Narain, has, Sir Joseph Fayrer states, performed lithotomy more than 200 times in the stations of Cawnpore and Budaôn, with the loss of only 7 cases; but this success appears to be altogether exceptional. Further important information is contained in Sir Joseph's 'Clinical and Pathological Observations in India,' 1873.

In strangulated hernia the intestine, if not released, speedily becomes gangrenous; and even after early operations, gangrene frequently ensues in the portion of intestine that has been injured. Although in the country districts it is often seen that severe wounds involving the large joints or the viscera are repaired, yet these patients are found to evince a low standard of vitality, and in many instances are attacked with pyæmia or gangrenous inflammations. Sir Joseph Fayrer believes the natives of India recover, under favourable hygienic conditions, perhaps as well as Europeans; but he thinks this is all that can be said of them.

Dr. Garden (*loc. cit.* vol. xii.) finds that of 824 cases of lithotomy performed in the course of eighteen years in a dispensary at Saharunpore, 108, or 1 in 7·63, were fatal. 'A very high mortality if the native of India possesses, as he appears to, a peculiar facility of recovering from operations and incised wounds generally.' The death rate after lithotomy in England, according to Mr. Poland, in Holmes's 'Syst. of Surg.' (vol. iv.), is 1 in 7. I am indebted to Professor Peaslee for a communication in which he says, 'Blacks have, according to my own observation, far less tolerance of severe surgical operations than whites.' Tetanus is common after wounds among the natives of the Polynesian Islands. Mr. A. Corrie has published (*Lancet*, vol. ii. 1875) accurate notes of the cases that were under his care in the attack which led to the death of Bishop Patteson. And the same complication very commonly follows even trivial wounds in the natives of the district occupied by the Zambesi mission on the East Coast of Africa.

Note VI. page 22.

Since the Lectures were given, Surgeon-Major Porter, under the title 'Intermittent Hæmorrhage from Malarial Influence' ('Med. Chir. Trans.' vol lix. p. 135), has contributed a very remarkable case illustrating and throwing further light upon the influence of malaria on the progress of surgical cases. A soldier, aged twenty-two, who had suffered severely from ague in India in 1873, was invalided to England with strumous abscesses, perforated palate, and disease of the left knee, in March 1875. Amputation through the left thigh was performed on July 8th, and he went on well till the afternoon of the 16th, when he became chilly and irritable, and the stump swollen, painful, and throbbing: then there followed flushing of the face, high temperature, and rapid pulse. These symptoms continued till five a.m. on the 17th, when hæmorrhage in the form of venous oozing occurred from the stump to such an extent that it could be arrested only by the use of perchloride of iron. Similar attacks, in which the bleedings were to a very formidable amount, took place on the 19th, 20th, 21st, and 23rd, on which day quinine, in three-grain doses every eight hours, was prescribed. No more hæmorrhage was observed; but on the 25th the patient's temperature rose to 101·7° and his pulse to 126°. The attack, however, passed off with copious perspiration. From this date he made a good recovery. An account of some very similar cases, met with in the late Turko-Russian war, is shortly to be published, in the Report of the Stafford House Committee, by Mr. A. Symons Eccles, chief surgeon to the ambulances at Philipoppolis, Salonica, and Gallipoli.

Note VII. page 24.

I have collected the particulars of upwards of a hundred and twenty cases in which tracheotomy was performed in children suffering with diphtheria, and in none of them was the wound attacked by the disease. Trousseau, however, says ('Dictionnaire de Méd.' 1835) that in the course of an epidemic he has seen leech-bites, slight cuts, blisters, and excoriations in various parts of the body, and different wounds, become diphtheritic. Dr. Squire (Reynolds' 'Syst. of Med.' vol. i. p. 388) makes a similar statement. And Mr. Spence (in a letter) states, 'I have on several occasions seen the wound affected, and have known the child die from that after the breathing was free and the tube removed.'

Note VIII. page 27.

Children so rarely suffer with strangulated hernia that it is difficult to speak positively upon any point respecting the affection in them. But present experience seems to show that they form an exception to this rule: for in a considerable number of the cases that are recorded the bowels have acted —in not a few copiously—without ill effect, from three to six or eight hours after the operation, and have subsequently remained regular. (Article by Editor 'St. Bartholomew's Hospital Reports,' vol. x. p. 210 *et seq.*)

Note IX. page 47.

Many of the insane are persons who not only enjoy sound bodily health, but also lead very regular lives, secure, in the restraint under which they are placed, from intemperance and other faults of diet, and from overwork, exposure, and various influences that make other patients unfit for surgical operations or the repair of injuries. And many of them derive further advantage from their indifference to their condition, and freedom from all anxiety as to the result of their illnesses. Their power of tolerating injury was well shown by the case of a patient who attempted suicide at Bethlehem Hospital, in Sir William Lawrence's time, by thrusting his head into the fire, and keeping it there till he had so injured his skull cap that the whole vault was afterwards separated by necrosis. Yet he suffered very little in his general health, and lived fourteen years subsequently. The skull, with the portion that exfoliated, is in the museum of St. Bartholomew's Hospital (Ser. I. 100). Mr. Ferguson, of Cheltenham, has lately published an instance in which he amputated the leg of a man who had placed himself, in an attack of acute mania, before a train on the line. This patient was very violent for many days after the operation, and frequently pulled off his dressings and bruised his stump, yet he made a good and tolerably rapid recovery, and left the hospital in about two months.

Mr. Curling records several examples of self-mutilation, in all of which the wounds healed favourably; and he remarks that these cases 'generally do well, and the state of mind under which the injury is inflicted does not seem to operate prejudicially to the patient's recovery.'—'Dis. of Testis,' 4th ed. p. 90.

The case, however, is different in some instances of melancholia, associated with a general breakdown of health from prolonged mental trouble or overwork, coupled with habits of intemperance. Thus in attempted suicide, wounds of the throat remain for long periods pale, glassy, œdematous, and without progress in healing, while the patients continue quiet and sullen, and gradually fail in general health. Not rarely they die of exhaustion with their wounds still unclosed.

Note X. page 79.

No figures are available by which to show precisely to what extent the mortality following operations has been reduced in the last twenty or thirty years, for in the early part of this period no complete notes of the practice of the hospital were preserved. But the following table, compiled from the statistics now annually prepared by the surgical registrars, shows the estimate, given at page 79,—that the mortality has been reduced by one-half—is well within the mark. Even in the last fifteen years the death-rate has fallen much more than fifty per cent. It is true that the death-rate after primary amputations is nearly as high in the second five years, in the table, as it was in the first five; but it should be remembered that frequently the accident which has crushed a patient's limb has also inflicted other severe injuries; and it is to these, and not to the amputation, that the fatal issue is mainly due. It must be anticipated that, for this reason, the mortality of primary amputations will always be comparatively high. The death-rate, however, of secondary amputations, and of amputations for disease, shows a reduction of much more than half in the second as compared with the first five years. The table of secondary amputations also confirms the statement in the text that the fever and all the other troubles apt to follow operations have been largely diminished. For, although the practice of primary amputations has become more and more restricted, and thus the cases which might have to be subsequently treated by secondary amputation have been more numerous, yet the number of secondary amputations is seen to have fallen from 37 to 11: a fact from which it may be concluded that, if the cases were of a similar severity, as they probably were, twenty-six escaped serious complications, so that the limbs were saved in the latter period which, in the former, would have called for secondary amputation.

The statistics of the hospital also show (see Table II.) that in the three years 1875, 1876, 1877, while 270 cases classed under the headings of erysipelas, phlegmonous inflammation, diffuse cellulitis, pyæmia, septicæmia, and phagedæna were admitted, and 93 occurred among the patients in the wards (a total of 363), only 25 cases of erysipelas, 5 of phlegmonous inflammation, 1 of diffuse cellulitis, and 12 of pyæmia, or a total of 43, were met with after operations. Of the 363, 56 were fatal; of the 43, 15 died, 10 of the deaths being caused by pyæmia.

TABLE I.

Table of Amputations, 1864-1868.

PRIMARY.

	1864	1865	1866	1867	1868	Total	D.	P.C.
Hip joint . .	...	...	...	...	...	...	...	...
Thigh . . .	1	1	...	...	...	2	...	...
Knee joint . .	...	...	1	...	...	1	...	...
Leg . . .	6	4	4	3	3	20	12	60·
Ankle joint . .	...	...	...	...	...	...	...	...
Shoulder joint .	1	...	...	...	...	1	...	...
Arm . . .	4	1	2	1	2	10	1	10·
Forearm . .	3	4	2	1	7	17	1	5·88
Total . .	15	10	9	5	12	51	14	27·4

SECONDARY.

	1864	1865	1866	1867	1868	Total	D.	P.C.
Hip joint . .	...	...	...	...	...	...	...	...
Thigh . . .	3	6	4	2	1	16	10	60·25
Knee joint . .	...	...	1	...	1	2	...	...
Leg . . .	1	...	2	1	5	9	5	55·5
Ankle joint . .	...	...	...	...	...	...	...	...
Shoulder joint .	...	...	...	...	...	...	...	...
Arm . . .	6	1	1	...	...	8	2	25·
Forearm . .	...	1	...	1	...	2	...	...
Total . .	10	8	8	4	7	37	17	45·9

FOR DISEASE.

	1864	1865	1866	1867	1868	Total	D.	P.C
Hip joint . .	...	...	...	...	...	..	...	...
Thigh . . .	21	15	5	9	13	63	27	42·8
Knee joint . .	...	...	...	2	...	2	1	50·
Leg . . .	10	14	3	2	10	39	16	41·
Ankle joint . .	2	...	1	4	6	13	1	7·7
Shoulder joint .	...	1	...	...	...	1	...	...
Arm . . .	1	5	2	3	3	14	...	...
Forearm . .	3	3	1	1	2	10	...	...
Total . .	37	38	12	21	34	142	45	31·6

TABLE I.—(*continued*).

Table of Amputations, 1873–1877.

PRIMARY.

	1873	1874	1875	1876	1877	Total	D.	P.O.
Hip joint . .	...	...	...	...	...	...	...	...
Thigh . . .	2	...	1	1	2	6	1	16·6
Knee joint . .	...	...	...	...	1	1	...	...
Leg . . .	...	...	1	3	2	5	4	66 66
Ankle joint . .	...	1	...	...	...	1	...	...
Shoulder joint .	...	1	...	1	...	2	1	50·
Arm . . .	3	3	3	2	2	13	1	7·6
Forearm . .	2	...	2	2	2	6	1	12·5
Total . .	7	5	7	9	9	37	8	21·6

SECONDARY.

	1873	1874	1875	1876	1877	Total	D.	P.C.
Hip joint . .	...	...	...	...	...	...	...	...
Thigh . . .	...	1	...	2	...	3	1	33·3
Knee joint . .	...	...	...	...	...	...	...	...
Leg . . .	1	1	2	...	1	5	1	20·
Ankle joint . .	...	...	...	...	...	...	...	...
Shoulder joint .	...	...	...	...	...	...	...	...
Arm . . .	...	...	1	...	...	1	...	...
Forearm . .	...	1	...	...	1	2	...	...
Total . .	1	3	3	2	2	11	2	18·

FOR DISEASE.

	1873	1874	1875	1876	1877	Total	D.	P.C.
Hip joint . .	1	2	...	1	2	6	5	83·3
Thigh . . .	12	19	18	9	14	72	9	12·5
Knee joint . .	2	...	...	...	...	2	...	...
Leg . . .	7	7	9	2	7	32	4	12·5
Ankle joint . .	8	9	7	6	5	35	2	5·7
Shoulder joint .	...	...	...	1	...	1	1	100·
Arm . . .	...	...	2	4	4	10	1	10·
Forearm . .	1	4	3	2	4	14	...	...
Total . .	31	41	39	25	36	172	22	12·7

TABLE II.

Sub-table of Erysipelas, Pyæmia, &c., in St. Bartholomew's Hospital in 1875, 1876, 1877.

	1875	1876	1877	Total	D.
Erysipelas:—					
Admissions . . .	47	29	20	96	3
Occurring in hospital .	26	15	10	51	7
Occurring after operations	6	12	7	25	3
Phlegmonous inflammation:—					
Admissions . . .	62	36	38	136	16
Occurring in hospital .	12	8	1	21	6
Occurring after operations	...	4	1	5	2
Diffuse cellulitis:—					
Admissions . . .	5	5	1	11	5
Occurring after operations	...	...	1	1	...
Pyæmia, and Septicæmia:—					
Admissions . . .	8	6	3	17	9
Occurring in hospital .	1	3	7	11	10
Occurring after operations	5	2	5	12	10
Phagedæna	2	4	4	10	...

Note XI. page 86.

Demarquay relates two cases in which this accident happened, and mentions a third ('Bulletin Gen. de Thérapeutique,' 1861, p. 21 *et seq.*). In one, a muscular and vigorous man, aged 35, in a struggle with his horse came to the ground with all his weight thrown upon one foot. He was unable to walk, and felt severe pain at the lower part of the leg and in the foot. No fracture or bone-dislocation could be detected, but there was considerable ecchymosis in the course of the peronei; and on the outer surface of the malleolus a tense cord could be felt rolling under the finger; and this was easily returned, when the foot was extended, into the normal position of the peroneal tendons. A long compress and a bandage sufficed to keep the tendons in place, and in three weeks the patient could walk on the limb.

In the second case a young woman jumped from a window, and immediately afterwards was unable to walk, and complained of severe pain in the foot. There was considerable ecchymosis in the lower third of the leg, extending from the posterior aspect of the fibula forwards to the dorsum of the foot, and in the space between the fibula and tendo Achillis. The peroneal tendons lay in their natural position, but it was evident they were not contained in their sheath; and Demarquay believed they had been displaced in the fall, but had afterwards slipped back again into place. Mr. Curling (*Brit. Med. Jour.* January 2, 1869) has recorded a well-marked case of displacement of the peroneus longus. The *Bulletin de l'Acad. de Médecine*, January 6, 1874, contains a very interesting paper communicated by M. Broca for M. Charles Martins, in which the latter describes a dislocation of the tendon of the tibialis posticus forward on the internal surface of the malleolus, which occurred in his own person. He received this injury by being thrown violently down during the landing of a balloon in which he had made a voyage. The tendon was easily replaced, but he could walk only with much pain and difficulty, and ecchymosis, extending as high as the knee, and considerable swelling, followed. He recovered with rest and the careful use of compresses, &c., in three months. M. Martins has given his paper additional value by making in it a collection of all the examples he could find of displacement of muscles. His list includes, besides the tibialis posticus, the long tendon of the biceps brachialis, the triceps brachialis, rectus femoris, sartorius, plantaris, and the peronei.

Note XII. page 89.

In this specimen, as in that of Mr. Soden's, for the two are singularly alike, the long tendon of the biceps has slipped from its groove about half an inch inwards, and is there confined by a strong band of fibrous tissue, which passes over it and straps it down. Mr. Soden's specimen is in the museum of King's College Hospital (No. 1341). Mr. Edmund Owen believes that dislocation of the tendon in Mr. Soden's case resulted from changes produced in the joint by chronic rheumatoid disease;

and he recently showed several specimens in confirmation of this view. Mr. Soden's specimen certainly presents the characters of rheumatoid disease, as does also the preparation mentioned in the text. Mr. Owen's paper is in the 'Medico-Chirurg. Trans.' vol. lviii. p. 377.

Note XIII. page 89.

The following is a condensed report of a case given by Hamilton. ('Fract. and Dislocations,' 3rd ed., Philadelphia, 1866, p. 581.) Mrs. B., aged 56, was thrown from a carriage, and dislocated her right shoulder. The dislocation was soon 'reduced,' but the joint remained painful, tender, and disabled, and the patient could raise the arm only a very short distance from the side. Passive movements, however, were painless, and free in all directions. Seven years afterwards the joint still remained partially crippled, and on examination at this time, the head of the humerus was found resting upon the outside of the coracoid process, and the shoulder was unnaturally prominent in front and flattened behind. A few months later, in a sudden and thoughtless effort to raise the arm above the head, the muscles unexpectedly obeyed the will, and from that time the patient had perfect use of the limb, although the deformity still remained. She believed she heard a snap when the arm went up, but it was followed by no pain, soreness, or swelling. Hamilton thinks there can be no doubt that the deformity and disability here described were due, in great measure, to a displacement of the long tendon of the biceps.

The subject of the dislocation of tendons and muscles is fully treated by Mr. Callender in the *British Medical Journal*, July 1878.

Note XIV. page 90.

Mr. Hey, in his original paper on 'Internal Derangement of the Knee-joint,' says, 'The leg is readily bent or extended by the hands of the surgeon, and without pain to the patient; at most, the uneasiness caused by this flexion and extension is trifling. But the patient himself cannot freely bend, nor perfectly extend the limb in walking; he is compelled to walk with an invariable and small degree of flexion. Though the patient is obliged to keep the leg thus stiff in walking, yet in sitting down the affected joint will move like the other.'—('Practical Observations in Surgery,' 1810.)

Note XV. page 90.

This cast, No. 29 in the series of models and casts of diseased and injured structures, is thus described in the museum catalogue, vol. ii. p. 278, No. 29. 'Cast of a knee in which it was presumed that the internal semilunar cartilage had been displaced by external violence. Over the situation of the cartilage there was a deep crescentic depression of the integuments (this is well shown in the cast). The patient was knocked down, and fell with his left leg bent under him, and from that instant was unable to bear on the limb. In examining the limb while the knee was bent to its utmost, a sudden crack was heard, the depression of the integuments on the inner side of the knee disappeared, and the mobility of the joint was restored.'

Note XVI. page 121.

Mr. Hutchinson ('Lond. Hosp. Rep.' vol. ii. p. 109) expresses his belief that peritonitis very rarely occurs before the operation has been performed, unless it is provoked by perforation and fæcal extravasation. What are taken to be the signs of peritonitis—sickness, constipation, an anxious expression, a somewhat dry tongue—are really due only to intestinal obstruction; while attentive examination will show that, although there is a painful sense of dragging if pressure is made near the neck of the sac, there is none of that general intolerance of pressure which marks a case of peritonitis. He points out that when, as it occasionally happens, patients die of strangulated hernia without operation, not the slightest sign of peritonitis is found after death; and he cites an instance, fatal on the tenth day, from unrelieved strangulation, in which this was the case. In his article on Intussusception (*Med. Chir. Trans.* vol. lxvii.) his language is even more positive:—'In intussusception, as in strangulated hernia, and other forms of intestinal obstruction, it may, I think, be taken as an established fact, that unless actual perforation has occurred, there will be no peritonitis.' In explanation of the everyday observation that peritonitis is found in cases of death ensuing very speedily after operations for hernia, he remarks 'that it is almost impossible to exaggerate our conception of the wildfire rapidity with which inflammation of a serous membrane may commence, and may extend when once an adequate cause has been supplied.' The chief causes of peritonitis after operations for hernia he thinks are the return of intestine in a state of advanced inflammation, with flakes of lymph adhering to it, and with spots on its surface which are approaching gangrene; and, secondly, the injury inflicted by fingers, directors, &c., introduced into the sac. In all this Mr. Hutchinson finds an obvious occasion to insist on the necessity for early interference in cases of strangulation; on the caution required in determining whether a piece of inflamed intestine should be returned or left in the sac, and on the gentleness and care which must be observed in everything connected with the operation.

Note XVII. page 128.

Posture has been found very useful by Mr. Thomas Smith in the reduction of strangulated hernia in infants. In several instances reduction which could not be accomplished when the child was first seen by taxis employed after chloroform had been administered, occurred spontaneously when the child had been lying for some hours on his back with his feet drawn high in the air and fastened to a horizontal bar.

Note XVIII. page 132.

At St. George's Hospital it is the almost invariable custom to open the sac in every case of operation for strangulated hernia. Thus in a paper in the *Medical Times and Gazette*, vol. i. 1861, it is stated by Mr. Cooper and Mr. Holmes that in 121 cases there were only 4 in which the sac was not opened. And Mr. Haward, writing in the 'St. George's Hospital Reports,' vol. i. 1866, increases these numbers to 181 and 6 respectively. In the series of 121 cases the mortality was 30·5 per cent.; and the authors compare this death-rate with that in 100 cases at the London Hospital, in more than half of which the sac was not opened, and in which the mortality was 33 per cent. The conclusion drawn by Mr. Cooper and Mr. Holmes from these figures, and from an examination of the cases at St. George's Hospital, is that the opening of the sac has no effect either on the death-rate or on the time required for the healing of the wound, and Mr. Haward expresses his belief that the balance of advantage certainly lies with the operation in which the sac is laid open. Although the custom at St. George's Hospital is stamped with very high authority, it may be doubted whether it is right on such a point to follow anything like a uniform rule of practice. Cases of hernia present an endless variety: every example therefore demands separate consideration. It seems inconceivable that in the 181 cases mentioned by Mr. Haward there were only six in which it was to the patients' advantage that the sac should not be opened, and it is needless to say that in any given case the welfare of the individual is the only guide that should be followed. In other words, we must descend from the general to the particular. The mortality in the 121 cases at St. George's was slightly below that in the 100 cases at the London Hospital, but if the cases of umbilical hernia be thrown out of both tables—and they have no bearing on the present question, for the sac was opened in all of them—the death-rate for the inguinal and femoral kinds is 30 per cent. in both series. And it follows that if any advantage was gained in some cases by opening the sac, it was counterbalanced in others; for the final result is the same. An instructive lecture is published in the *Medical Examiner* for July 26, 1877, by Mr. Holmes, who, after carefully analysing the statistics of St. George's Hospital, is inclined, in suitable cases, strongly to recommend the operation without opening the sac.

Since the lectures on hernia were given, Dr. Dieulafoy has published his 'Traité de l'Aspiration des Liquides Morbides,' which contains a chapter on the employment of aspiration in the reduction of strangulated hernia. The operation consists of puncturing the hernia at one or more points with a fine tubular needle connected with an air-exhauster, and removing any gas or fluid that may be present either in the sac or in the cavity of the intestine. Dr. Dieulafoy refers to numerous cases in which aspiration has been thus used either by himself or by other well-known Continental surgeons. In some of these strangulation had lasted as long as four or five days, and the taxis had failed to accomplish reduction; yet after aspiration the hernia was easily returned. Against these successes he has to record some few instances in which aspiration failed to procure reduction, but none in which any mischief resulted. And he concludes that 'la ponction aspiratrice d'une anse intestinale herniée, pratiquée au moyen de l'aiguille n° 1, ou n° 2, est d'une compléte innocuité.' The cases most appropriate for aspiration are those in which the hernia is formed of intestine without omentum, strangulation is recent, and there are no adhesions. But he thinks it should be tried in all cases of strangulation, with the single exception of those in which there is reason to fear the intestine is already gangrenous or ulcerated. And he would use it before resorting to the taxis. Several surgeons in England have practised this method, and have obtained satisfactory results. But the anticipations of Dr. Dieulafoy have not been fully realised. Aspiration has failed in a considerable number of cases, and it is assuredly not so free from danger as Dr. Dieulafoy believed when his lecture was published. In several recently recorded cases of obstruction in which the intestine was punctured during gastrotomy for the relief of distension, no contraction of the coats of the bowel occurred, and, the opening remaining patent, fæcal extravasation resulted. There would seem to be a great liability to the same accident if a distended and inflamed intestine were punctured in a hernial sac.

There are many conditions which render it impossible or not right to return a hernia without opening its sac, and in which aspiration would prove useless or mischievous. At present the method must be held to be on its trial. It will perhaps prove valuable when strangulation is recent, and reduction is prevented by a collection of gas or fluid either in the sac or the canal of the intestine; but it must be used with great care, and only after a very close consideration of all the features of the case.

Note XIX. page 155.

Probably the injury inflicted by acute, or long-continued strangulation on the vaso-motor system of nerves distributed to the blood-vessels and muscular wall of the intestine may explain both the œdema of the coats of the gut, and the effusion which takes place into the sac; and also the paralysis of the strangulated portion which may remain after reduction has been accomplished.

Note XX. page 155.

In a valuable paper on 'The Surgical Treatment of Peritonitis' in the 'St. Bartholomew's Hospital Reports,' vol. ix. Mr. Thomas Smith, referring to the good results obtained by washing out the cavity of the peritoneum in peritonitis following ovariotomy, asks whether the same treatment might not prove equally serviceable in some instances in which peritonitis occurs as a complication of strangulated hernia.

Note XXI. page 274.

In papers published in the *Lancet* (December 11, 1869, and March 24, 1874), Dr. Eade, of Norwich, draws attention to the efficacy of treating carbuncle by means of carbolic acid, whether allowed to soak through the ulcerations of the skin, or injected, in watery solution, into the substance of the swelling. In all the cases in which he has used it, 'its application has been followed by a uniform and immediate check to the increase of the disease, and a speedy amelioration of the local conditions. When it has been applied early it has plainly gone far to abort the disease, and when it has been commenced later, wherever it could be brought into contact with the inflamed and hardened tissue, there at least no further spreading has taken place.'

M. Raimbert (*Bull. de l'Acad. de Méd.*, Paris, p. 549, 1875) has a long paper entitled 'Du traitement du Charbon chez l'homme par l'injection sous-cutanée de liquides antevirulents.' Marked advantage was observed after the injections, both of iodine and carbolic acid. Dr. John Lidell (Hay's *Amer. Jour. Med. Sciences,* December 1873), writing on 'Thrombosis of the Cerebral Veins and Sinuses of the Dura Mater,' remarks, in reference to facial carbuncle: 'The local lesion commencing, as it may, as a pimple, speedily enlarges, and becomes attended with erysipelatous symptoms . . . and great prostration . . . swelling of the eyelids, protrusion of the eyeballs, cerebral symptoms, and probably pyæmia,' and he states that he has not found on record a case of facial anthrax with the above symptoms in which there did not exist, if search after death were made, phlebitis and thrombosis of the facial, temporal, angular, and ophthalmic veins, and of the cavernous sinus. Many other authors confirm these observations. Klingelhöffer (*Berliner Klinische Wochenschrift,* No. 44, November 2, 1874) relates three cases of very severe facial anthrax which were successfully treated by the application, as deeply as possible, of liquefied crystals of carbolic acid and dressings of strong carbolic lotions.

Note XXII. page 344.

The two following specimens are in the Museum of the College of Surgeons.

No. 1. A hip-joint, in which after the head and upper part of the neck of the femur had been destroyed by ulceration, the shaft was drawn up, so that the remains of the neck rest upon the ilium just above the brim of the acetabulum. The capsular ligament has been removed: the acetabulum is filled with fibrous tissue. The walls of the femur are very thin, and light. From a woman aged 70. Ten years before her death she had an apparently scrofulous affection of her hip. Abscesses communicating with the joint opened in the groin, and ultimately the limb became much everted and shortened. The parts, however, ultimately healed. The patient died of apoplexy. After death her lungs and liver were found tuberculous.—'Path. Series. Cat.' Supplement I. No. 936.

No. 2. 'The five upper cervical vertebræ and the condyloid portion of the occipital bone affected at several points with ulceration (caries). The right transverse process, and both the upper and lower articular surfaces of the same side of the atlas are entirely destroyed. The disease has also affected the corresponding condyle of the occipital bone, and the articular surface and side of the body of the axis, the right transverse process, and side of the body of the third and the left occipito-atlantal articulation. These parts were removed from the body of the Very Rev. W. Buckland D.D., Dean of Westminster, who died, æt 73, August 14, 1856. No symptoms manifested themselves during life but those attributed to melancholia.'—*Loc. cit.* No. 3406.

Note XXIII. page 350.

Strong confirmation of these observations has been met with at the Hospital for Sick Children. The following table compiled from the records of fever occurring among the in-patients is sufficient for the purpose of illustration. The cases are placed as they stand, entered in different years, in the Wardbook:—

No. of case	Sex and Age	Date of Admission	Nature of Operation	Date of Operation	Date of Attack
	y. m.				
1	f. 1·9	July 22	For Cleft palate	July 23	July 24
2	f. 3	Sept. 6	„ „ „	Sept. 8	Sept. 10
3	m. 3	Sept. 3	„ „ „	Sept. 10	Sept. 11
4	m. 2	Jan. 31	„ Webbed fingers	Feb. 14	Feb. 16
5	m. 3·6	June 24	„ Necrosed tarsus	June 30	June 31
6	m. 9	July 6	„ Fatty tumour	July 8	July 9
7	m. 4·6	Oct. 31	„ Necrosed tarsus	Nov. 2	Nov. 4
8	m. 4	June 16	„ Ischio-rectal abscess	June 16	June 18

And Mr. Thomas Smith tells me he has performed lithotomy on forty-three children under ten years of age, and of these seven had scarlatina. In Case 1 the eruption appeared on the day after the operation, and there were rigors, and a temperature of 104·6°. Case 2, eruption on second day, followed by general desquamation. Case 3, eruption on second day, death on thirty-first day from albuminuria and anasarca. Case 4, eruption very soon after operation, followed by desquamation. Case 5, eruption on third day, severe albuminuria. Case 6, slight eruption very soon after operation, followed on thirteenth day by general desquamation, and by severe albuminuria. Case 7, eruption on second day, beginning at the wound, and spreading over trunk and limbs. This proportion of seven in forty-three cases is very high, yet the real proportion was even larger than these figures represent, for among the thirty-six children that escaped there were, as Mr. Smith remarks, no doubt some who, having already had the disease, were in great part if not completely protected against a second attack.

It has been questioned whether the affection is true scarlet fever. In many instances, however, it certainly is, for its features are well marked and characteristic. Of others, which might be very doubtful if seen as isolated cases, Dr. Gee, whose authority will be recognised, and who has closely studied the subject, says, in his article in 'Reynolds's System of Medicine,' 'that the disease really is scarlet fever seems to be proved by the following observations: first, it occurs in epidemics (of scarlatina); secondly, that in a given epidemic a severe case occasionally relieves the monotonous recurrence of the very mild forms; thirdly, that a precisely similar scarlatinilla attacks, in the same epidemic, patients who have not been subjected to operation, and who have no open sore; and, lastly, by way of a veritable *experimentum crucis*, that however freely these patients are exposed to ordinary scarlet fever afterwards, they do not contract that disease.' The cases related above illustrate many of the points relied on by Dr. Gee. In not a few the attack was severe and followed by albuminuria; the majority were seen during the prevalence of scarlet fever in town, and almost all, if not every one, as soon as the illness appeared were transferred to a ward used for the treatment of scarlet fever, and which generally contained recent cases; yet I believe none of the patients suffered from any further contagion. In the old hospital, in use when the above note was written, scarlet fever and surgical cases, though separated as far as possible under the circumstances, were under the same roof. In the new hospital, scarlet fever is removed to a separate building. With this change, the cases alluded to have become extremely rare.

Sir James Paget has mentioned two views as to the explanation of this connection between operations and the appearance of scarlet fever; and the evidence derived from the cases related above goes to prove that both are correct, though of course in different cases. 'That a peculiar liability to contagion is induced by an operation, and that the poison produces its specific effects in much less than the usual period of incubation' seems clear from such cases as the following:—A boy (case 4 in the table) was admitted on January 31. On February 14 he underwent an operation on a deformed hand, and on the 16th the rash appeared. No scarlet fever had occurred, so far as his parents knew, near his residence for some time before he came into the hospital, and, indeed, he had been in for a period that was more than long enough to complete the incubation of the disease, without showing any symptom of illness. But on the same day (February 14) on which his operation was performed a boy, who was admitted into the ward with bronchitis, was found three hours later with the eruption of scarlet fever. Again, a child was seized with scarlet fever the day after an operation had been performed on her mouth. Her mother knew nothing of any source of previous infection, but the surgeon who performed the operation was at the time nursing his own children with the disease. Now it seems nearly certain that the first child derived the fever, either just before or just after his operation, from the patient in whom the rash was just coming out, and that the second was infected at the very time from the clothes of the surgeon who performed the operation. On the other hand, in several instances very careful search has failed to discover any source of recent infection; and in such the only probable explanation seems to be that, as Sir James Paget suggests, the patients 'had previously imbibed the poison, but would not have manifested its effects so soon, if at all, unless their health had been exhausted or disturbed.'

The interval between the operation and the appearance of the rash has been quite as short as that recorded in the text. In several the eruption has come out on the next day, and the period (from twelve to thirty-six hours, Gee) by which vomiting and high temperature commonly precede the eruption has been comparatively seldom distinctly marked.

To anticipate the possible objection that fever may have been already on the point of breaking-out when the operation was performed, I may state that this source of fallacy has been carefully borne in mind: it is a standing rule to examine the temperature, and if it is found in any degree above the natural standard the operation is invariably postponed.

Scarlet fever apparently stands alone among the eruptive fevers in its proneness to attack patients immediately after operations; for although outbreaks of measles have been noticed under similar circumstances, their occurrence has been so rare that they may well be regarded as mere coincidences; and the same may be said of chicken-pox.

Great help may be gained in the study of this subject from a very able and valuable paper (in the twelfth volume of the Obstetrical Society's 'Transactions') by Dr. Braxton Hicks, in which he discusses the occurrence of scarlet fever immediately after parturition, with the purpose of investigating its relation to puerperal fever. In this essay, and the cases that accompany it, Dr. Hicks shows: 1. That patients are frequently attacked with scarlet fever after labour. 2. That the disorder appears very speedily—generally within four days. 3. That the usual premonitory symptoms are often absent. 4. That contagion is in some cases conveyed at the time of labour, in others that it has, so far as can be ascertained, occurred some time before. 5. That in many instances the disorder deviates widely from the normal type.

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